JOURNAL
OF THE
AMERICAN PHARMACEUTICAL ASSOCIATION

Vol. V **MARCH, 1916** **No. 3**

PUBLISHED MONTHLY BY

AMERICAN PHARMACEUTICAL ASSOCIATION

Office of Publication: Bourse Building, Philadelphia, Pa.
Annual Subscription, $4.00; Single Numbers, 35 Cents

Entered as Second-class Matter January 28, 1916, at the Post Office at Philadelphia, under the Act of March 3, 1879.

NEXT ANNUAL CONVENTION, ATLANTIC CITY
SEPTEMBER, 5—9, 1916

The Fairchild Culture
Of the Bacillus Bulgaricus

Effective in every clinical application of the bacillus Bulgaricus. Particulars, clinical data, etc., upon request.

Vials of approximately 7 c.c. each

Boxes of 6 vials, $3.75 per dozen

Boxes of 20 vials, $10.00 per dozen

FAIRCHILD BROS. & FOSTER

NEW YORK

Specify MERCK'S

"ORIGINAL PACKAGES"

SPECIFY

Milliken Pharmaceuticals

See Our Advertisement on Page vii

JOHN T. MILLIKEN & CO., ST. LOUIS

DRUG STORES (Snaps) for sale and positions in all states. Physicians, Veterinarians, Dentists furnished for locations.
F. V. KNIEST, R.P., Omaha, Neb. Est. 1904.

Table of Contents of this issue will be found on the last page (XX).

JULIUS ARNOLD KOCH

Reporter on the Progress of Pharmacy
of American Pharmaceutical Association.

JULIUS A. KOCH

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. V MARCH, 1916 NO. 3

JULIUS ARNOLD KOCH.

Julius Arnold Koch, the present Reporter on the Progress of Pharmacy of the American Pharmaceutical Association, has occasion this month to celebrate the twenty-fifth anniversary of his appointment as Dean of the Pittsburgh College of Pharmacy. He graduated from the latter institution in 1884, where he also took a special course in chemistry under Prof. Hugo Blanck. From 1880 to 1891 he was associated with his father in the drug business at Pittsburgh. In 1891 Professor Koch accepted the Chair of Pharmacy and the deanship of his Alma Mater. In 1896, under Adolph v. Baeyer, in Munich, and again, in 1897, under Gatterman and Victor Meyer, at Heidelberg, he pursued special work in organic chemistry and accomplished the synthesis of aromatic aldehydes by the Friedel-Crafts reaction, as also a second synthesis (Ber., xxx, 1622, and xxxi, 1149). In 1900 he accepted the Chair of Organic Chemistry, and in 1903 that of Chemistry and Director of the Chemical Laboratories, having meanwhile (1901) been appointed Professor of Chemistry and Director of the Chemical Laboratories of the Department of Medicine, University of Pittsburgh.

Doctor Koch has been very active in pharmaceutical educational matters, having been for eight years chairman of the Executive Committee of the American Conference of Pharmaceutical Faculties, in which position his efforts have been largely directed toward the standardization of pharmaceutical degrees. He has been a member of the United States Pharmacopœial Conventions of 1890, 1900, and 1910, and at the latter meeting was chosen a member of the United States Pharmacopœial Revision Committee. In the American Pharmaceutical Association he has filled a number of important offices, and numerous other pharmaceutical and chemical associations, both European and American, list him as a member.

In 1897 he received the degree of Doctor of Pharmacy, in 1905 that of Doctor of Philosophy, and in 1907 the degree of Doctor of Science.

J. H. WURDACK.

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

A MAN WITHOUT A COUNTRY.

"A MAN without a country" is strangely typical of the American pharmacist, considering pharmacy in its broader, more comprehensive sense, and this unfortunate condition of the collectors, importers, manufacturers, distributers, and dispensers of drugs and medicines, in these United States, renders them quite as helpless and as inefficient, in personal potentiality, as would be "The Wandering Jew" in considerable multitude.

It may be justly advised that the commercial divisions of pharmacy are well and efficiently organized, that the educational and legal features are also properly associated, and that these national bodies are influential within themselves and for themselves. The phases: the *phases* of pharmacy are, then, organized and are in a position to be represented, just as the Diplomatic Service, the Army, the Navy, Internal Affairs, Postal Service, Agriculture, Commerce and Labor are organized and in a position to be represented. But what would be the result, what would be the loss or what the confusion if these departments were not correlated and did not make up the great executive part of the Government? Is it possible that any sensible person will say that the phases of pharmacy, as represented by our great national bodies, should not be correlated and attached to a catholic central body with a history, with prestige; with an association that has all the peculiar and liberal qualities that make it especially well fitted to become the greater holding body—"The Country"—of American pharmacists; remembering that a person who has anything of importance to do with drugs and medicines *is* a pharmacist?

At present the practical and clearly destined way of bringing about a quick and acceptable correlation of the phases of pharmacy is through the National Drug Trade Conference. Broaden its field of operations, not too greatly at first, and make *it a part of the American Pharmaceutical* and let the American Pharmaceutical cease to be a part of the Conference, and at once the great scheme of uniting *all* pharmacy has been accomplished. An appeal that enforces responsibilities is made to the members of the Drug Trade Conference and to the several organizations they represent for a serious, a generous, and a decisive consideration of this most important subject.

HENRY P. HYNSON.

THE DRUG TRADE AFTER THE WAR.

IF there were no other reasons than the different views of financiers and statesmen on "business after the war," then these alone would deter us from attempting to express an opinion on this much-discussed subject.

Mr. Ray Morris, in the Atlantic Monthly for March, presents an analytical summary, expressive of the sober thoughts of two representative groups of prominent merchants and brokers—one sees golden prosperity; the United States as the

source of supply for Europe; also, South America being a creditor, that the commerce of that section will come here.—The other concludes that our mushroom prosperity, one hundred percent profits on war contracts, is unfitting us and raising wages to a point which will make effective competition impossible with rivals who will be compelled to secure outlets for their products of cheaper labor. South America being a raw-material producer, like the United States, must buy where she sells.

Perhaps the best that we may hope for is that both are right and wrong; surely, if one or the other is right, we are either fortunate or ill-fated. The conclusions seem to be quite as reliable as the prognostications based on the conspiracy of the ground-hog with the sun on the second day of February.

Manufacturers are realizing that the question of wages is becoming a serious one; also, that the influence of reduced profits needs explanation, whereas large dividends are received without apologies. It is generally accepted that all prices of drugs and chemicals are not at present based on supply and demand, and some day there must be an adjustment. All this will require careful study if we are to be prepared for business conditions when peace has been restored.

There is no matter of greater importance than the establishment of a tariff commission, without political attachments and the members chosen on account of their efficiency and courage to do right.

Chief among the reasons that contribute to lower prices of European manufacture are the coöperation of government with the industries and the universities; the low freight rates for export goods; encouragement of industrial combinations, and low wages.

Progress in contemplated research work is evident: only recently a Bureau of Industrial Research was established at the University of the State of Washington, which will attempt to coördinate the research activities already undertaken by the university, with a view to the utilization of the resources of that state.

While state and government should provide means for research work because thereby the national community is benefited, the industries themselves could well afford to encourage schools by provisional endowments and thus stimulate an interest which will prove a source of profit. The investigations and contributions of Hermann Frasch can be cited as just one example of what pharmacists may do in promoting the industries. The encouragement of schools and earnest associations may be considered in the light of good investments instead of mere donations.

Australia has recently provided a fund of two and one-half million dollars for the establishment of a national laboratory for the application of scientific research to Australian industries. The aim of the national laboratory is the coördination of existing institutions—commonwealth laboratory, universities, agricultural colleges, technical and mining schools, and ordinary schools.

It was not until about a year ago that Great Britain provided for the endowment of research. This took the form of a grant amounting in the aggregate to a hundred thousand pounds sterling contributed for experimental and laboratory

work in connection with the scheme for establishing the coal-tar dye industry. Later an Advisory Council on Industrial Research was provided with thirty thousand pounds for the purpose of devising plans and assigning investigations to laboratories, etc.

A possible British protective tariff is foreshadowed by the Advisory Committee on Commercial Intelligence in a report which reads, "that where the national supply of certain manufactured articles, which are of vital importance to the national safety, or are essential to other industries, has fallen into the hands of manufacturers ready to undertake the manufacture of such articles in this country, the manufacturers should be afforded sufficient tariff protection to enable them to maintain such production after the war."

We may summarize that if the American industries concerned with the drug trade are to be materially developed there must be coöperation all along the line, from government to people. The latter must be willing to encourage American manufacturers, while the other divisions in the coöperative chain must studiously work out a plan of action and put it into effect. The means employed for exploitation and selling by foreign countries have been subjects of the magazines and press.

A thought that might be here included relates to, who would be entitled to the results of research work made possible by the people or the industries? The spirit that prompts such endowments is altruistic, hence the results should be made available, under proper conditions, for the public advantage.

The American Pharmaceutical Association has from its very inception largely contributed to the knowledge of pharmaceutical and chemical manufacturers, and the latter have helped to make the transactions of the annual meetings of the Association mutually profitable. Industrial research is but the expansion of one idea that has been fostered by the Association. The JOURNAL and the YEAR BOOK are valuable mediums for communicating and conserving knowledge relating to pharmaceutical and chemical activities and the progress being made therein. Many of the industrial enterprises, somewhat removed from pharmacy, have been made possible, or rather the products manufactured by them had their origin as medicinal agents. Such developments are just as probable hereafter, and manufacturers should not be unmindful of their inheritance. A deeper interest and substantial encouragement of the American Pharmaceutical Association and the JOURNAL will energize their endeavors preparatory for a period that, more than ever before, will require the coöperation of the coördinated forces of the drug trade. There are some who think there is no possibility for improving pharmacy, and that is largely the reason for slow progress or seeming failure. The future is always based on what we *will* it to be: history demonstrates that. E. G. E.

THE VALUE OF HISTORICAL PHARMACY.

BIOGRAPHIES of great men, in whatever field of activity, are most instructive and useful as helps and guides, and serve as incentives to others. The present state of things is the consequence of the past, therefore a source of information

anent the good we enjoy or the disadvantages we contend with. "History teaches philosophy by example." The two subjects are so closely related that for this article we will not make a distinction between history and biography.

All of us have been inspired by the lives of others, therefore no argument is needed for convincing any one of the powers of biography and history. We may not attribute a stimulus to this source because the influence seems to come from within ourselves. Our culture is resultant upon the study of one subject with another, one radiating light into the other, and becomes part of ourselves. No one will deny that the lives of pharmacists are activated by their tutors, preceptors, and patrons any more than that the acts of our statesmen are expressions of popular demands.

The introduction of manual training into our public schools was responsive to the necessity for developing the industries, helpful to the young men and women in their chosen vocational occupations. There is another auxiliary side to secondary education, and that is through a knowledge of the men similarly engaged and their activities, whether successful or unproductive. The contemplation of the lives of men inspires faith in times of discouragement. They have accomplished, and so can I; it also tends to the creation of higher ideals and a resolve to succeed, though others have failed. In other words, the study of biography has both inspirational and sustaining power.

The greatest difficulty presented in making history a subject for encouragement of the student lies in speaking only of the achievements of men and not of their struggles and failures. Both are essential from an educational point of view: one is a sequence of the other. The youth finds encouragement when he succeeds where another is less efficient, but is discouraged rather than enthused when he reads of work still beyond his reach, the result of trials he himself is now experiencing.

Biography is a culture medium which permits young people to enjoy the company of those who have served their profession, interests them in the knowledge they have made available, enables them to understand that which has been accepted as truth, and enkindles aspiration for higher ideals.

A pharmaceutical education is incomplete unless it comprehends a general familiarity with the important diverse fields of human thought and also is linked with the history of the profession and those who pursued it. Without the vision that enables him to view the past, with only the concentrated gaze on the present-day conditions, the young pharmacist lacks perspective, is out of sympathy with the spirit of the history of progress and unappreciative of the common interests of related activities and those whom he serves. He cannot realize the more serious duties involved in his work, nor does he understand the current of advance that sweeps beyond the sphere of proximate things. An analysis is not complete if the preliminary determinations are not considered with the final results; so also the purposes of pharmacy are better understood if we have a general knowledge of its development.

Those who attend the annual meetings of the American Pharmaceutical Asso-

ciation go away with higher ideals for pharmacy, with an inspiration and a determination to be more useful to their profession. True, like resolutions, these promptings nearly always lose their power, but nevertheless there is inspiration from others. The important thing is for each of us to keep faith in himself and the profession, increase the knowledge thereof, work usefully and prove grateful to those that worked therein before, beneficially to those that are to come after.

"History is neither more nor less than biography on a large scale."—"The best thing which we derive from history is the enthusiasm that it raises in us."

E. G. E.

OUR VISION IS NOT MEASURED BY WHAT OTHERS HAVE SEEN.

WE reproduce an editorial from the Alumni Journal of the Columbia University College of Pharmacy under the caption of "A Word About the A. Ph. A."

The remark that the American Pharmaceutical Association does not appeal to the average retail pharmacist is heard much too often not to be taken seriously. One of the several reasons advanced is that "it is composed too largely of 'high-brows,' college professors, etc."

Only recently we heard a member make this selfsame statement. The speaker was one who had only a short time since retired from the presidency of a state pharmaceutical association upon the completion of an exceptionally successful administrative year. The association had hit, as many thought and said, a slump, the finances were in poor condition, and interest was lagging.

Quite a few of the speaker's friends criticised the organization, not at random and iconoclastically, but usually constructively, and, when the gentleman was chosen president, flocked to his support and assisted him in performing wonders in infusing new life and interest into the Association.

No doubt there are others, real workers, not shirkers, active in divers pharmaceutical bodies, who hold similar views of the American Pharmaceutical Association. If this be true, it bodes the American Pharmaceutical Association no good, and something should be done to disillusion the doubters and to induce them to become active workers in the ranks of the pioneer pharmaceutical association of our country.

Perhaps the foregoing editorial should have a reply, even though the oft-repeated charge is quoted, that the American Pharmaceutical Association is composed too largely of "high-brows," college professors, etc., and is part of the first paragraph.

The Association speaks for and welcomes accessions to the membership; the Treasurer each year sends out a series of persuasive letters to those who are not sufficiently interested in their membership. Every one is invited to participate in the activities of the Association, and those that come invariably feel well repaid for their time and expenses they have incurred. There is no section that does not offer information for all and presents ample opportunities for discussions of subjects that apply to the activities of the druggist.

The Association invites criticism that is constructive: he who has a valuable scheme for reform should not wait for others to make the beginning. It is an easy matter to offer a suggestion: to activate it requires persistent work: quibbling and wrangling over things cause dissension, but do not make for progress.

It should be understood that no exception is taken to the editorial, because such statements every one has heard. The desire, however, is to convert the thought into some useful accomplishment. The term "high-brow" must be ignored entirely, for it is not specific; but, as a matter of fact, is it desirable to exclude the teacher? Surely not. Rather they should be encouraged to greater and deeper interest, and the larger membership should offer them problems that are nearer and more advantageous to the success and the promotion of the drug business.—Lend a hand.

Every one will admit that the Association is not perfect, no, and that is simply saying that the individual members are not. There is no organization that is not subject to some kind of criticism, unless there is no life in it.

Unity and cohesion are essential conditions for association work. The American Pharmaceutical Association is engaged in harmonizing many separate interests, while at the same time it is endeavoring to carry on constructive work. The complexity of the drug business in itself offers many problems; the educational status is not the same in all states or even within respective localities; there is wanting the close coöperation between physicians and pharmacists that should obtain. And so we might enumerate the many diverse situations which engender a spirit of criticism from one or more contending factions. This is the crux: both coördination and coöperation are necessary, and with it all an altruistic spirit and a desire to be really helpful in upbuilding the Association.

Means must be sought to hold the members within the ranks and bring outsiders into the Association. Let us not forget our duty in promoting harmony, remembering that the Association must reconcile conflicting pharmaceutical interests and harmonize those of pharmacy, on the one hand, and the medical profession, the public in general, the government and the state, on the other; also, that we are prone to forget the potential work the Association has done and is doing, but possessed of keen sight for deficiencies, that men now and in the past have sacrificed much so that many might be benefited.

If the desire is ardent and sincere for a better, stronger, and more efficient Association, it will become so, provided we all work together. Criticism has an enlivening value in correcting errors and stimulating energy, but there should also obtain the constructive faculty, promoting the legitimate aim of criticism; namely, to direct attention to the excellent.

E. G. E.

PROPOSED REORGANIZATION OF HOSPITAL CORPS.

IN the proposed reorganization of the Hospital Corps of the United States Army, this division becomes part of the Medical Corps. The enlisted men of the Hospital Corps are transferred to the corresponding grades of the Medical Corps established by the act which provides for reorganization.

The titles given are "Master Hospital Sergeant" and "Hospital Sergeant," etc. Chairman Hilton, of the Committee on the Status of Pharmacists in the Government Service, writes that, while the titles provided are not what we may desire, the provisions are otherwise in accord with what we have been asking for. He also urges that the Association use every means at command to push the bill through Congress and thereby help the members of the Hospital Corps.

The total number of enlisted men in the Medical Corps under the contemplated act will be approximately equal to five percent of the total enlisted strength of the army, and in time of war the Secretary of War is authorized to increase the number. The master hospital sergeants and hospital sergeants represent each one-tenth of the Medical Corps. Master hospital sergeants are appointed by the Secretary of War, following an examination which includes pharmacy, and they must have served for not less than twelve months as hospital sergeants or sergeants.

The recognition of pharmacists in the Government Service speaks for the valuation that the public places on the services of pharmacy, and our duty is plain for proper recognition of those engaged in the service and also that their qualifications will reflect credit. American pharmacy is deeply interested; let us see to it that all the recognition pharmacists are entitled to is accorded.

E. G. E.

RIGHTING AN OMISSION.

IT is to be regretted that, in the sketch of Professor Diehl's life published in the February number of the JOURNAL, a very important part of his activities for pharmacy has been inadvertently overlooked; namely, his work in behalf of the National Formulary, with which he has been preëminently connected since its inception. In the preparation of the first edition he was active as a member of the committee from the Kentucky Pharmaceutical Association. Of the succeeding editions, including the one now in process of revision, he has been the dominant factor, having been chairman of the Committee of Revision from the beginning of the first revision to the present time.

JULIUS A. KOCH.

SECTION ON HISTORICAL PHARMACY, AMERICAN PHARMACEUTICAL ASSOCIATION

HELD AT SAN FRANCISCO, CAL., AUGUST 12, 1915, 2 O'CLOCK P.M.

The Historical Section of the American Pharmaceutical Association convened in the Gold Room of the Bellevue Hotel, in San Francisco, August 12, 1915, at 2 o'clock P.M., E. G. Eberle acting as chairman and Dr. Albert Schneider acting as secretary.

Mr. Eberle: Neither the chairman nor the secretary of this section is present. I have agreed to act as chairman, and, if there is no objection, I would ask Dr. Schneider to act as secretary. The first order of business is the chairman's address.

Fellow Members of the Historical Section:

It is with deep regret that I am unable to be with you at this meeting, and I earnestly hope that our session will be a success. My address will be brief. In looking over the addresses of our chairmen for past years I find that pretty nearly everything has been recommended, but little has been done to put any of these recommendations into effect. We resolve, then dissolve. Therefore I will make but two recommendations, which I earnestly ask you not only to approve but to take action that will produce results.

Recommendation I: That the Historical Section recommend and urge the earliest possible action of the American Pharmaceutical Association towards securing and maintaining a conveniently located storage place for the collection and preservation of the historical documents, relics, etc., now nominally in the care of the Association. This should be in charge of the Librarian, or other officer, who can give proper care to our historical collection.

Recommendation II: That members of the Association, especially the elder members, be requested to contribute more liberally to this section on topics pertaining to the history of American pharmacy, personal or relating to education, industrial and scientific pharmacy, associations, etc.

This recommendation speaks for itself. This section is directly responsible for the collection of historical material for future work on the history of American pharmacy. There are few members who *cannot* contribute some valuable data, but very few do it. I earnestly hope that more interest will be taken in this matter and that members will not require continual begging by future chairmen for contributions.

As to the first recommendation: It may surprise many of you to learn that the unreplaceable, valuable historical documents and relics in care of the Association are scattered all over the country in the devoted care of some member of the Association, who preserves them at his own expense because there is no place to which to send them. The Association is sadly at fault in this matter. Even if stored in packing cases at an official place in charge of some responsible officer it would be better than the present absolute lack of proper care. If the Historical Section is to continue its work, if historical contributions are to be solicited, the Association *must* provide a safe central place for the storage and preservation of its collection of historical material; and at an early date, too, if it would not lose more of the treasures historical that are now going to libraries, colleges, etc., because the owner does not trust the American Pharmaceutical Association as their guardian. Furthermore, our material at present is of little value to any member or student, so widely is it scattered. I doubt if anybody really knows what we have; I don't,

and I don't even know where much of it is, even after inquiries. A start might be made by requesting all members having historical material in their personal charge to furnish the Librarian with lists of what they have. I earnestly ask the section to take this matter up at once and that members personally make it their business to see that some action be taken by the Association and something actual be started, at least. Don't resolve and dissolve; ionize and get action. In days to come the Association will have its own home building, we hope; this matter will doubtless come before the meeting. But I warn you against letting rosy views of the future relax your energies in securing action now on this question of providing a place for our historical collection. The home may come; proper care and storage of our collection must come.

I am sorry to say, in closing, that illness and overwork have prevented me from doing many things I had planned for our section. There is plenty to do as a private, however, and I expect to do my share in future. The work of the Historical Section is very dear to me and I am proud of its record. May it continue to grow in interest and importance!

With greetings to all and hearty wishes for a record-breaking session, I present this as my address as chairman of this section.

FREDERICK T. GORDON.

Mr. Eberle: The recommendation which refers to the storage of historical contributions has partially been taken care of by placing these in charge of the Editor of the JOURNAL, who becomes Historian, the conservator of historical contributions, and secretary and chairman doing the work of this section.

Recommendation No. 2 asks that the members be requested to contribute more liberally to the section. What is your pleasure with regard to the report of the Chairman? Is there any action you wish to take?

Dr. Weinstein: I move that the report be received and accepted.

(Motion seconded, put, and carried.)

Mr. Eberle: The next is the Historian's report.

HISTORIAN'S ADDRESS.

The life of every individual is characterized by his antecedents, his contemporaries, and those who will live hereafter. He draws lessons from the past, existing moral and social laws mark his character, in some degree he anticipates the future, and thus, while his progress and development largely depend upon his own efforts and energy, he follows precept and example. We may say of one individual he lives in the past; another is only concerned with the present; still another is in advance of the times, but, as a matter of fact, we are of those that have been, those that are and will be. We note this gradation in the world's activities: the burden-bearers of the Far East are represented by our modern methods of conveyance and we have displaced their simple tools by machinery.

History reveals, records, and foretells events. The value of history is not only in the lessons we draw from the lives of individuals or of nations, but largely in the profit we have from the experience of others. The less progressive people of other climes gradually adopt methods we have discarded. Even one section of the country reads the history of another; current events here are elsewhere ancient history.

What value has the history of pharmacy? We derive a general knowledge of progression and are enabled to convert our antecedents' attempts into accomplishments. As ambition marches over the bodies of the dead, so progress is made possible by learning that which others did not comprehend.

Our failures will be converted into successes or the futility of our attempts recognized and avoided. Just as one pharmacopœia is a more perfect guide than its predecessor, so our knowledge is built upon the experiences of others.

We seldom give such serious thoughts to the history of pharmacy, because the suggestions of the past are so closely linked by gradual progress. Our purpose is largely in the pleasure history of pharmacy gives us, of the acquaintance it establishes or renews with predecessors—to have some record, behold something that was transcribed by them, to be in possession of some memento or relic that belonged to them, stimulating a kindred pride. Even that is valuable for precept and example, and so this section is worthy of your support, encouragement, and development. And this brings me to " Bodemann's *ceterum censeo.*"

At the meeting in Detroit the Association endorsed the recommendation that Veteran Druggists' Associations be established by branches of the American Pharmaceutical Association, and one of the prerequisites to membership should be the writing of an autobiography. In this way the life records of many pharmacists would be preserved for future pharmaceutical generations. You all will remember the very interesting autobiography of J. Winchell Forbes, edited by Dr. J. H. Beal. Not all of us have such an eventful life, and Dr. Beal might not be willing to lend his facile pen for effective description, but we have at least a pharmacist's part, however humble that may be. No reports of activity in that direction have come to this section, except from the Chicago Veteran Druggists' Association. The writer speaks for such provision in every Branch.

The Historian should be curator of papers and donations to this section, and the office should be more or less permanent. Those who make contributions desire, of course, that these be permanently preserved and accessible.

I would ask your consideration of another recommendation, and that is, every applicant should be requested to send his or her photograph to the Editor of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION with the following essential notations on back: date of birth; degrees received, where and when; dates of business or professional history. It will readily be seen that this will not only offer information, but be helpful in compiling data for those who write the history of the Association.

E. G. EBERLE.

Mr. Eberle: Now, the first recommendation that I make has already been provided for. The other suggestion is this: when a member is elected to the Association, when he is informed officially of his election, that he then be requested to send a photograph of himself, or herself, as the case may be, and on the back of it make those few statements so that we have a record. You can readily see that this will be useful at some time or other.

The report is before you.

Mr. Nitardy: I move that the report be received.

(Motion seconded, put, and carried.)

Dr. Alpers: I am glad that this recommendation at the end, which is only in the form of a wish, has been made. I have been trying for years to bring about the same thing. It is probably the right thing that the Historian should undertake it. But I would go further. I would not only have the date of birth on the back of the photograph; I would devise a full set of questions regarding a man's life, his early education, his college life, the papers he has written, the offices he has held, and anything that might be of interest pharmaceutically. We cannot compel a man to sign it. We can compel a new candidate to make certain statements we need, but I do not think anybody would refuse such information, and it would be valuable.

I might say that anybody who has tried to write history—and I have tried to write up the history of this Association—will know what difficulty he meets in getting information of the simplest kind. You read there of a great man, of a

man of prominence in a certain meeting who brought out something of importance. You try to get some information about him, and it is impossible to get any, or only with the greatest difficulty. Therefore I think we owe it to this Association that such a record should be kept, and even those who are members now should be invited to fill out the blanks and answer the questions.

I heartily endorse the recommendation.

Dr. Schneider: Some four years ago I had some correspondence with Mr. Hayes with the idea of getting out a "Who is Who in American Pharmacy." I think that it is a work that should be undertaken and would be right in line with these suggestions. So many of the younger generation in pharmacy read our contributions before the sections, but don't know who the authors are. If we had a record of that kind, these readers could have the desired information. The men who are acquainted with the contributors don't need it.

Mr. Eberle: Are there any further remarks? If not, I will put the motion.

(The motion was put and carried.)

Mr. Eberle: The Secretary is not here, and we have no report from him.

The next paper on the program is on the subject of "Pharmaceutical Happenings from 1810 to 1814," being additions to contribution presented in 1913 and 1914, by Professor Otto Raubenheimer, and the next paper is "Pharmaceutical Events a Century Ago," by the same author. These have not reached the Historian or the Chairman, but are somewhere on the way. They were sent too late, and we cannot do anything with them.

Dr. Alpers: Would it be out of order to move that these papers be received? They can be read by title, as the author is not here. They are valuable contributions to history. I move, if it is in order, that they be received as soon as they reach the Historian.

(Motion seconded, put, and carried.)

Mr. Eberle: The next paper is entitled "Some Contributions Pharmacy Has Made to Civilization," by Miss Zada Cooper. Miss Cooper is engaged in the Women's Section at this time and asks that her paper be read by title and referred. The contribution is quite a lengthy one and gives some very interesting recollections of prominent men in the history of the past who have also been concerned with pharmacy.

Dr. Alpers: I move that the paper be received.

(Motion seconded, put, and carried.)

Mr. Eberle: Next on the program is "A Brief History of the Work of the Indiana Board of Pharmacy." Mr. Rudder told me he would contribute such a paper, but I have not had word from him since that he has done so. So we cannot take any action on that paper.

The next is a paper, "A Memoir of John Criddle Wharton." This paper is not lengthy. It is four typewritten pages, and, if you desire, I will read it. The author of the paper is not here.

Dr. Alpers: I would say that, according to the resolution of the Council, a paper whose author is not present can only be read after the others who are present here have been disposed of. I have no objection to reading it, but I call attention to that resolution; they must be present personally or represented.

Mr. Eberle: The point is well taken, and we will pass that for the time being.

The next paper is "History of Pharmacy in Montana," by Charles E. Mollet. Professor Mollet is not here. Under the circumstances, this paper can be read by title and received.

Montana is a new state, and it is interesting to have this early history of

pharmacy. Professor Mollet stated that he will contribute further papers. I suggest that this be referred in the usual course. What is your pleasure?

Dr. Weinstein: I move it be read by title.

(Motion seconded, put, and carried.)

Mr. Eberle: The next paper is one that has required much research library work. It refers to "Animal Drugs Used in Medicine During the Middle Ages in England and France." The paper is by George Gehring Marshall, and is in the hands of Dr. Alpers, who will present it.

Dr. Alpers: Dr. Gehring Marshall, one of the members of our Association, expected to be here, but on the day he was to start he was taken with appendicitis. He asked me to read this paper. I do so for the reason that I share the paper with him in so far as an instructor in a college can share a paper that a student prepares.

This paper is really a study. It is far too long to read, but is one of the most valuable contributions to the history of pharmacy. Mr. Marshall intends to continue this work, and together we expect to study the early materia medica of France, England, and other countries.

To show the value of work that has been done, Mr. Marshall purchased one book for which he paid $600. I call your attention only so you may know the deep interest he exhibited in this contribution. He purchased a great many other books for reference, and others were secured from various libraries, always with the aim of authenticity in mind, regardless of trouble and expense.

(Dr. Alpers gave a very interesting account of the contribution; however, as he will submit an abstract for publication in the JOURNAL, his remarks are here omitted.)

Dr. Alpers: I think this is one of the most valuable compilations that has ever been made upon this subject, and, while I could not say that it is absolutely exhaustive, I believe it contains more than was ever written before. I don't know whether it can be printed in full, but I think parts of it should be printed to show what the work is.

Mr. Nitardy: I should think it would be valuable to print that in full, and then have reprints of it that would be valuable to librarians.

Dr. Alpers: One copy of this is in the archives of the College of Pharmacy, to whom it was presented. I believe this is the only copy Mr. Marshall has, and, if I am not mistaken, he asked me to bring it back to him. If this is the only copy, I would ask the privilege of taking it back, and he will send it later to be incorporated in the papers of the Association.

Mr. Eberle: We have the fact before us that the paper was presented. I wonder if Dr. Alpers or Mr. Marshall could not present the paper in abstract of the more important points. The Association, I know, would appreciate it, if Dr. Alpers or Mr. Marshall would offer the paper in abstract.

Dr. Alpers: I can only say that I will do my best. I think it can be done. I know that parts of the paper are interesting, and the two of us together can present an abstract which will outline the paper.

Mr. Eberle: I would like to ask that the request be embodied in this resolution. Are there any further remarks? If not, I will put the question.

(The motion was put and carried.)

Mr. Eberle: Now, we have "Autobiographies of American Pharmacists," by Wilhelm Bodemann, but, Mr. Bodemann not being here, we will pass that for the time being.

The next is "The Dreiss Drug Store of San Antonio, Texas," accompanied by

photographs. I asked Mr. Herman Dreiss to contribute this paper because this store is one of the oldest stores in San Antonio.

(The photographs were then exhibited to the audience.)

Mr. Eberle: I will ask that this paper be referred.

The next is "The Founders of the California College of Pharmacy," by Richard E. White. I will read this paper in abstract or present it.

Dr. Schneider: Mr. Chairman, I move that the paper take its usual course.

(Motion seconded, put, and carried.)

Mr. Eberle: Now, "Early Pharmacy on the Pacific Coast," by J. F. Llewellyn. Mr. Llewellyn is not here, and I will ask that this brief paper be read by title and take the usual course.

Dr. Schneider: I move that it take the usual course.

(Motion seconded, put, and carried.)

Mr. Eberle: We have a paper that was passed over a little while ago, "Historical Notes of Kansas Pharmaceutical Association," by Mr. J. S. Chism. The paper is quite lengthy and, if Mr. Chism can present it in abstract or give an outline of it, that might be acceptable.

(Mr. Chism then read portions of his paper.)

Mr. Eberle: You have heard the reading of the paper. What is your pleasure?

Dr. Schneider: I move it be received.

(Motion seconded, put, and carried.)

Mr. Eberle: The next we have is "Biographical Sketch of John Barnitz Bond." The sketch is short and I think it ought to be read. I will say that Dr. Bond died in Arizona at the home of his daughter, July 20, 1915.

Dr. Schneider: I move that the paper take the regular course.

(Motion seconded, put, and carried.)

Mr. Eberle: We now have a paper on "Opium, Its Alkaloids and Derivatives," by M. I. Wilbert, Washington, D. C. The suggestion has been made that this paper be read by title and take the usual course.

Dr. Schneider: I move it be read by title.

(Motion seconded, put, and carried.)

Mr. Eberle: We have another paper, "A Dramatic Moment in the History of the American Pharmaceutical Association." The paper is by Henry L. Taylor, secretary of the Syllabus Committee, and this sketch is accompanied by photographs which were made at the time the publication of the Syllabus was provided for. The photographs accompanying are not quite complete. Dr. Taylor will endeavor to secure all the photographs so we may have a complete record of the organization of the Syllabus.

Dr. Schneider: I move that the paper be referred to the custodian's care.

(Motion seconded, put, and carried.)

Mr. Eberle: We also have the "Memoir of John Criddle Wharton," by J. O. Burge. He was an honored citizen of Nashville, and to a certain extent nationally known. If it is your desire, I will read the paper.

Dr. Alpers: I move the paper be read.

(Motion seconded, put, and carried.)

Mr. Eberle: You have heard the reading of the paper. What is your pleasure?

Dr. Schneider: I move it take the regular course.

(Motion seconded, put, and carried.)

Mr. Eberle: So ordered. Now we have the paper of Wilhelm Bodemann, "Autobiographies of American Pharmacists." This brings out the point of the necessity or value of members of the Association writing autobiographies for

future reference. Shall I read this paper or refer it? What is your pleasure? I will do as you like.

Dr. Alpers: I move you read it.

(Motion seconded, put, and carried.)

Mr. Eberle: You have heard the reading of the paper.

Mr. Scoville: I move it take the regular course.

(Motion seconded, put, and carried.)

Mr. Eberle: Now, then, that concludes the papers, excepting the illustrated lecture, and I want to call your attention to the contributions made to the Historical Section this year. There are only a few of them, because when I was informed that I was to act as chairman here I had so little time to get in contact with those who might contribute.

We have here, as indicated by the program, the Report of F. B. Lillie, delegate from Oklahoma to A. Ph. A., 1905 and 1906; A Short History of the Oklahoma Pharmaceutical Association from its Organization to the Beginning of Statehood; Copy of Original Pharmacy Law for the Territory of Oklahoma; Appendix of the Proceedings of Indian Territory and Oklahoma Pharmaceutical Association, together with By-laws Governing the Board of Pharmacy for the Indian Territory; Last Report of the Oklahoma Territorial Board of Pharmacy, which passed out of existence November 16, 1909. This is when Indian Territory became part of Oklahoma as a state.

These contributions I have, and I simply mention them so that the contributions may be known. I have a Biographical Sketch of Charles Theodore Mohr, by Eugene A. Smith. Mr. Mohr was the most noted botanist of the South, and was a member of this Association for a good many years. The sketch is written quite interestingly, and I simply offer that as a contribution for the Historical Section.

I also present again the Baylor Round-up for 1914–1915. This is the annual volume issued by Baylor University.

I have a photograph sent me by Mr. F. W. Meissner of Leo Eliel, deceased. I have also photographs of Charles E. Dohme and Dr. Fr. Hoffman, from Wiesbaden, Germany. This card was written from Wiesbaden, just before the 1902 meeting of the Association, when Dr. Hoffman expected to be present, but could not on account of impaired health. It is on a postcard and I will pass it around.

That is all excepting the illustrated lecture which we will have in the other room, and, unless some member here has something to present, we will nominate officers for the ensuing year, chairman and secretary.

Dr. Alpers: I would like to ask a question for information. I would like to know whether the Historian is ready to receive contributions of historical value outside of papers. It is a question that has been brought up here and was brought up in the General Session as to where the records should be kept. I understand they are scattered in different places. Some are kept by the Historian, and some by other members, some by the General Secretary, and so on. I had always hoped that a central office or home for the Association would be established where they could be deposited. I have in my possession a few things that I would like to deposit with the Association. They are not of great importance, but I would like to know whether there is any one to receive them.

Mr. Eberle: By the action taken the other day, Dr. Alpers, you will remember that the editor was made the Historian, simply to keep these contributions. And just as soon as I become permanently settled I will make arrangements to store these contributions. We have contributions in half a dozen or more different

hands, and I will try to collect these and see that they are properly taken care of, but will not do so until I become permanently located.

Mr. Nitardy: I would like to ask if it has been the policy of the Association or the Historian of the Association to take a copy of all the photographs and other things that are used at these annual conventions and save them from year to year for future historic interest that they will have in a century from now.

Mr. Eberle: I don't think that has been done, but should be done.

Mr. Nitardy: I believe the printed matter used at the annual meetings, even such things as the banquet program and badges and programs of sections, and all those things, should be collected and stored away. They are of no interest next year, but they will be some day.

Another thing I would like to ask is if state associations have taken up the matter of appointing historians and saving photographs and things like that for their own organizations. If that has not been done, I think the American Pharmaceutical Association, especially the Historical Section, could render quite a service by endeavoring to interest state associations in work along that line. We have just started on that work in Colorado, and it is now a part of our Constitution and By-laws to have a Historian and official photographer, and this official photographer must take pictures of anything and everything he thinks is of interest, to furnish a copy of each picture and the plate to the Historian, or the film, as the case may be, with suitable notations of what they represent and why they were taken, and take a second copy of the picture and put it in a scrap-book to be on display at each convention. That is just one of the duties of the official photographer and historian.

Mr. Eberle: I think we could get in touch with the various state associations and secure as far as possible historical data of the associations and those who have taken active part. In order to do that we should have a place where we can get at these contributions, or they will be worth very little.

Mr. Nitardy: This proposition of taking pictures of every convention—how interesting it would be if we could have a scrap-book that would be on display at this convention that would show the official photographs or some other photographs that were taken at the conventions of the American Pharmaceutical Association!

Mr. Eberle: We have a great deal of such matter in the library at the present time, but it is simply in boxes. It is nailed up.

Mr. Nitardy: Photographs ought to be a duplicate proposition.

Mr. Eberle: Matter that comes in now and for the next year or two can be cared for, and then, when it becomes too bulky, the Association must store it.

Mr. Nitardy: I think a systematic effort should be made to take everything that can be of historical interest and preserve it.

Mr. Eberle: Does anybody desire to make a motion to that effect, or is this just informal discussion?

Mr. Nitardy: If it is best to make a motion to that effect in order to have it done, I am willing to make that motion. I don't know just under what rules and regulations the Historical Section will work. I just brought it up as a matter of information to myself.

Mr. Eberle: Heretofore we have simply received these contributions, and for the last four years the Secretary or the Chairman has taken charge of these contributions. Prior to that time they were in the hands of Dr. Kremers. From Dr. Kremers they were sent to the Lloyd Library, I believe.

Dr. Claus: I would like to ask if it is wise to bring those to every convention.

If so, we would have quite a time looking over them, and a still greater time for the Historian to bring them here.

Mr. Nitardy: No. I think a scrap-book of photographs of previous conventions would be a nice thing to have. I don't know whether that would be advisable; I just mention that as having been adopted in the state of Colorado, and we are trying it out.

Dr. Alpers: Have you any idea of the size of that scrap-book?

Mr. Nitardy: No, I have not.

Dr. Alpers: If we only had the photographs of the living members we would have 2500. That would make quite a book. Then come all the interesting situations and combinations which will make considerable of a photographic library.

Mr. Mayo: As a matter of fact, the Historical Section has in its possession photographs of all the recent meetings. Some of them are complete and some incomplete. There has been no systematic attempt, simply a matter of chance that we happen to have had them almost every year.

I move that the Historian be requested to obtain, wherever possible, group photographs of the members of the various associations, and to exhibit some of these photographs at each successive meeting. One of the most interesting exhibits we had was a collection of photographs arranged and shown at the meeting, either in St. Louis or some other place. We had an interesting collection. We can notify the members to bring photographs with them. I have myself a collection of photographs taken at Denver that might be interesting, especially in future years.

Dr. Claus: I second the motion.

Mr. Nitardy: Wouldn't it be advisable to include with the request to collect these photographs, to collect all the programs and other things and store them in the library? Of course, we don't want them brought to the meetings. As I understand, there has been no systematic effort made to collect that sort of material, and it is so easy to do it at the time of the meeting, but you can never do it after that.

Mr. Mayo: I accept the amendment in the present shape.

(The motion was put and carried.)

Mr. Eberle: Now, then, nominations are in order. We elect a Chairman and Secretary.

Mr. Mayo: I nominate Charles Holzhauer.

(Nomination seconded.)

Mr. Eberle: Are there any further nominations?

Dr. Claus: I move the nominations be considered closed.

(Motion seconded, put, and carried.)

Mr. Eberle: He being the only nominee, the Secretary can cast the ballot for the Section.

(The motion was carried.)

Mr. Eberle: Mr. Holzhauer is elected chairman.

Mr. Mayo: I nominate George Gehring Marshall, whose contribution to this meeting indicates that he is a man who would do good work as secretary of the section.

(Nomination seconded.)

Dr. Claus: I move the nominations close.

(Motion seconded, put, and carried.)

Mr. Marshall was then elected secretary.

After the illustrated lecture on "Voyages to the East Indies and Drug and Spice Trade of the Sixteenth and Seventeenth Centuries," by Professor A. W. Linton, the Section adjourned.

EAST INDIAN VOYAGES OF THE SIXTEENTH AND SEVENTEENTH CENTURIES IN THEIR RELATION TO DRUGS, SPICES AND DYESTUFFS.*

BY ARTHUR W. LINTON.

INTRODUCTION.

Since the earliest dawn of civilization certain products of southern Asia and of the islands near the Asiatic shores have been held in high esteem. First in importance among these was the group of pungent and aromatic substances used by men to flavor their meat and drink; but much in demand, also, were certain antiseptic balsams and other plant products employed in medicine, as well as odoriferous woods and resins associated with religious ceremonies, vegetable coloring matters useful as dyes, and still other rare materials prized as perfumes and toilet articles.

From the times when men first engaged in trade, these products have ranked as important articles of commerce. In the ages when transportation was so expensive that substances of moderate value could not be carried for long distances, these relatively expensive wares were taken to the farthest confines of the then known world. As civilization spread over western and northern Europe, the spices and drugs of Asia came into demand in these regions; and, although this demand has been subject to variations, it has been persisted in to the present day. The trade-routes underwent many changes in the course of the centuries, these changes being closely associated with the rise and fall of empires.

It is not the purpose of this paper to trace the channels of trade during ancient, classical and mediæval times. However, the description of Venetian commerce will serve to depict conditions as they were before the discovery of the sea route to Asia; while in the story of the Portuguese voyages will also be found many references to the older trade routes.

VENETIAN COMMERCE.

Among the Italian commercial cities which rose to greatness during the Middle Ages in consequence of the traffic in spices, drugs, and other products of the Orient, Venice stands the queen. Venice it was which triumphed over all others in the contest for the commercial supremacy of the Mediterranean. At the time of the discovery of the Cape route to India, Venice served as the connecting link between the eastern and western worlds.

Founded in the fifth century, by fugitives fleeing from the hordes of Attila the Hun, in her early history nothing more than a collection of fishing hamlets, Venice, even from the first, was dependent upon the sea for sustenance. As time went on, the fishermen engaged in coasting trade, their commodities at first probably fish and salt. Later they dealt also in iron and wood, and made somewhat longer voyages, gradually penetrating the Greek Archipelago and eastern Mediterranean.

At a very early date Venice had established important commercial relations with the Eastern Empire, but in 1082, as a reward for valuable aid furnished in time of peril, Venice was granted special trade privileges in Constantinople, which

* An address before the Section on Historical Pharmacy, San Francisco meeting.

gave her great advantages over her rivals. Gradually acquiring territory upon the mainland and in the Archipelago, Venice grew to be a great power. At the breaking up of the Eastern Empire she was shrewd enough to claim as her share of the spoils territory of strategic importance from the commercial standpoint.

The period of the Crusades brought increased prosperity to Venice. The warriors of the First Crusade had toiled the long and weary way overland to Palestine, but leaders of later Crusades often found it wise to embark their armies at Venice for a sea voyage. The Venetians were willing to furnish ships and supplies, not, however, simply because of their zeal to redeem the Holy Sepulchre. A stronger motive, probably, was the stream of gold which this transport service caused to flow into the coffers of her merchants. Indeed, the leaders of the Fourth Crusade, unable to pay in cash the price of their transportation, were constrained to earn their passage by serving under the banners of Venice in an expedition against Dalmatia, a dependency of Venice, at that time in insurrection. Thus the army enlisted to smite the Saracen frittered away its strength in combat with Christian princes.

The Crusades contributed to the prosperity of Venice, not only because they provided her with a profitable carrying trade for the time being, but because they greatly stimulated in Europe the demand for the product of the East. The warriors of the Cross learned from their Moslem foes the uses of many drugs, spices, and perfumes which up to that time had been little known in Europe. The records of the customs house at Acre, the city which for a century (1191–1291) constituted the principal bulwark of the Crusades in the Holy Land, furnishes us with valuable information in regard to the traffic of that period. We find that among the goods leaving the port of Acre, in the thirteenth century, were the following: rhubarb, musk, pepper, cinnamon, nutmegs, cloves, clove leaves and stalks, aloes-wood, camphor, frankincense, dates, nutgalls, and flax. (Tschirch, "Handbuch der Pharmacognosie," p. 699.)

A further source of information in regard to the commerce of the time is found in the writings of Marino Sanuto, a noble Venetian merchant who visited Palestine and Egypt several times, about the beginning of the fourteenth century. He had been mistreated by the Sultan of Egypt, and one of the principal purposes of his narrative, of which copies were sent to Pope John XXII and to the kings of France, Italy, and Sicily, was to incite these rulers to still another Crusade. Sanuto discusses the cultivation of sugar-cane upon Rhodes and other islands, and that of flax and dates in Egypt. He mentions saffron among the dutiable articles of Alexandria, and states that almonds were an article of import of that city. Among the costly drugs, he mentions cubeb, mace, nutmegs, nard, and cloves; among the less expensive, ginger, pepper, frankincense, and cinnamon. In a later work Sanuto mentions a present sent to the reigning Doge, which included benzoin, balsam, aloes-wood, and opium. (Tschirch, pp. 722–723.) Sanuto apparently hoped, by instigating a blockade of Alexandria by the fleets of the Christian nations, to wrest from the Sultan his monopoly of the transportation of eastern goods from the Red Sea to the Mediterranean.

Although Sanuto's plans were never carried into effect, Venice became more and more powerful, both politically and commercially. She assumed dominion over many of the Mediterranean islands and various rich districts upon the mainland. However, her supremacy was not won without a struggle. Genoa, by her triumph over Pisa in 1284, had become a powerful rival of Venice. Genoa was especially strong in the western Mediterranean, but she gained control also over

important trading centres in the East, among these Famugosto, on the island of Cyprus; Pera, a suburb of Constantinople, and Kaffa, in the Crimea; as well as factories in Sinope, Trebizonde, and Sebastopol. For long Genoa was an ally of the Byzantine emperors, and through their favor enjoyed almost a monopoly of the commerce of the Black Sea. The period of bitter rivalry between Venice and Genoa may be said to cover most of the thirteenth and fourteenth centuries. During this time there were numerous clashes of arms between the fleets of the enemies, which did not always result in victory for the Venetians. However, by the great naval battle of June 24, 1380, when the Genoese fleet was destroyed, the power of Genoa was broken. For a hundred years and more, Venice was destined to rule the commerce of the Mediterranean. For her crushed rival had been reserved the honor of nurturing the boyhood of that indomitable spirit who was to find a New World.

The era of greatest glory and prosperity for Venice had arrived. Her merchants were found in every city of the Mediterranean and Black Seas, as well as in the commercial cities of northern Europe. Daru, in his "Hist. de la republ. de Venice," tells us that in the fifteenth century the exports of Venice amounted to 10,000,000 ducats annually. (The value of a ducat at this period was approximately one dollar.)

The Venetians at this time possessed a merchant fleet of 300 great galleys or argosies, and several thousand smaller vessels, as well as 45 war galleys. Daru is authority also for the statement that at this period Florence and Milan alone purchased annually from Venice 50,000 hundredweight of cotton, sugar to the value of 95,000 ducats, and great quantities of pepper, cinnamon, ginger, and dyestuffs. (Tschirch, p. 699.)

The larger Venetian vessels of that period probably did not greatly exceed 200 tons in burden. They were called argosies because built for the Venetians at Raguso, a Dalmatian seaport; older forms of the name being *ragosie, rhagusc,* and *ragusye.* In Shakespeare we find a picture of Venetian commerce:

> "Your mind is tossing on the ocean;
> There where your argosies with portly sail,
> Like signiors and rich burghers on the flood,
> Or, as it were the pageants of the sea,
> Do overpeer the petty traffickers."
>
> —*Merchant of Venice,* Act I, Scene i.

It was the policy of the Venetians to erect in the more important foreign ports *fondachi* (from the Arabian *fonduk*, a magazine). These were substantial structures, several stories in height, enclosing courtyards. The lower story was used as a warehouse and salesroom, the upper stories served as dwelling houses for the Venetian merchants resident in the port, as well as stopping places for merchants from the interior who had come to buy and sell.

As early as the thirteenth century, Venice had maintained commercial relations with Beirut, with Ajaccio, the port of Aleppo, and with Tabriz in the interior. We know that from these cities the Venetians obtained myrrh, ammoniac, lac, galangal, sandal-wool, camphor, and indigo, as well as various spices and other products of Asia. (Tschirch, p. 701.) However, their business with Alexandria far exceeded in volume that with any other port. The Moorish merchants brought the products of the farther East by way of the Arabian and Red Seas to the port of Suez, thence overland by caravan to the Nile, and down the Nile to Alexandria. Here East touched West; here the Moors, who controlled the commerce of the Mo-

hammedan world, trafficked with the Venetians, who dominated that of the Christian. By long experience in dealing with the Turk, the Venetians had come to know his ways, and it was always the policy of Venetian statesmanship to maintain friendly relations with the Sultan of Egypt. Even during the period of the Crusades the Venetian merchants had not been averse to accepting Moslem gold in payment for military supplies.

Having seen something of the manner in which the Venetian merchants obtained their supplies of eastern spices and drugs, let us follow these wares on their journey to the nations of northern Europe; for the Germans, Flemings, French, and English were at this time dependent almost entirely upon the Venetians for the spices which they were using to flavor their food, for the gums and balsams used in the healing art, for the aromatic woods and resins used as incense in their churches, and for the dyestuffs with which they colored their woollen goods.

The centre of the commercial life of Venice was the Rialto, the merchants' exchange, built upon an island of the same name. If commerce was the life-blood of Venice, then truly the Rialto was the heart. Here, in the days of Venetian glory, gathered merchants, princes and adventurers, the bankers and money-lenders, as well as merchants from Lombardy and Tuscany, from Bavaria and Hungary, from France and Germany. Here it was that Shylock heard the news of Antonio's many ventures, of his argosies despatched to Tripoli, to Mexico, and to England. (*Merchant of Venice,* Act I, Scene iii.) The treatment received by the merchant of the North while he was in Venice should be noted. He was required to live in the *Fondaco dei Tedeschi,* which served as warehouse and hotel. He was carefully watched by an official assigned to him, whose business it was to see that the State was not cheated of its revenues, and that Venetian merchants were not deprived of their profits. (Day, "History of Commerce," p. 95.) He could trade with no one but the Venetian merchants, for no one else must be allowed to make the middleman's profit. Having brought his goods to Venice, he must dispose of the entire quantity, even though the market was poor. These and many other restrictions he submitted to, simply because Venice held the monopoly.

The merchandise purchased by Germans in Venice was transported over the Alps, and this traffic was in the hands of the Germans themselves. Various passes were utilized, but one of the very important trade routes followed the valley of the Etsch, through the Veronese defile, over the Brenner Pass to Innsbruck, then up the Isar and Lech valleys to Augsburg. Convoys intended for the Rhine valley struck to the westward before reaching this point. Up the steep mountain roads creaked and rumbled the heavy freight wagons, guarded by strong detachments of armed men, for these mountain defiles were infested with robbers. (Tschirch, p. 70.)

The needs of western Europe and England were served by a fleet of Venetian galleys which left yearly for the voyage to the ports of these countries. The "Flanders galleys," as they were called, were each rowed by 180 oarsmen and carried a force of archers for protection against pirates. Although the cargo belonged to merchants, the fleet was under State control, and was commanded by an officer serving under the Venetian Government. Among the ports of call on their voyage were Pola, Corfu, Alicante, Almeria, Cadiz, and Lisbon; although many others were visited, at least on some voyages. For most of the galleys the outward voyage terminated at Bruges, in Flanders, at that time the emporium of northern Europe, and the point at which the Venetian met the merchants of the Hanseatic

League. Some of the galleys, however, went to London or Southampton. (Day, "History of Commerce," p. 97.) Venetian galleys were making these voyages as late as 1578, when an argosy was wrecked off the Isle of Wight. The Venetians declared they would not again send their vessels into such dangerous waters, and this incident stimulated interest among British merchants in direct trade to the Levant, which led to the organization of the Levant Company. ("Early Voyages to the Levant," Hakluyt Society, p. 11.)

Venice was a merchant republic. Her nobility, far from scorning vulgar trade, were proud to be merchant princes. Young patricians were sent on the Flanders voyages to study commerce and to learn to serve their city. (Day, p. 97.) Significant of the grateful acknowledgment by the Venetians of the sea as the giver of all their prosperity was the annual ceremony of the symbolic marriage of the Doge to the sea; when, clad in all the splendor of his ducal robes, from his official galley he tossed into the Adriatic a golden circlet, and repeated the words: "We thus espouse thee, O Sea, as our bride and queen."

The fearless sons of San Marco, filled with the spirit of adventure, but shrewdly seeking in all to direct to the marts of their mother city still other consignments of rich Oriental wares, wandered from the familiar channels of trade, and penetrated deep into the interior of Russia and of Asia. The most authentic travel narratives of this period are those which have come down to us from Venetian merchants who wrote letters to journals descriptive of their travels. They wrote of the people, their religions, their manners and customs, their institutions. But they wrote with especial care, and generally with great accuracy, of the resources and products of the countries visited, as well as of trade routes and commercial usages. Some of these records are of particular interest to us as furnishing the earliest authentic information in regard to many Asiatic drugs and dyestuffs.

Very efficiently had Venice served the nations of Europe as a carrier and middleman, but at the close of the fifteenth century she went down before the march of progress. Due to many reladings, as well as to exorbitant customs levied by the Sultan of Egypt, pepper and other products of the East were very expensive by the time they had reached the marts of northern and western Europe. This doubtless was one of the reasons that caused the Portuguese to seek the Cape route to India. From the moment when Vasco da Gama sailed into the harbor of Calicut, May 20, 1498, the commerce of Venice was doomed. Priuli, in his diary, has given us a picture of the consternation which reigned in Venice when the news was noised on the Rialto that Portuguese carracks, laden with Indian spices, were in the harbor of Lisbon. He says: "The whole city was disturbed and astounded. . . . For it is well known that Venice reached the height of her reputation and riches through her commerce alone, which brought foreigners to the city in great numbers; and now by their new route the spice cargoes will be taken straight to Lisbon, where the Hungarians, Flemings, Germans, and French will find the goods cheaper in Lisbon than they can be in Venice." (Horatio F. Brown, "Venice," pp. 324–325.) This was not the first time in the history of Venice that news of grave import had been received, but never had the proud city heard tidings that spelled ruin as did this report of the Portuguese voyage to India. However, the Venetians made an effort to avert the disaster. Leonardo da Ca'Masser was sent to Lisbon disguised as a merchant to obtain accurate information. Venice took steps to discourage the Portuguese from trading in India by inciting the Sultan of Egypt to equip a naval expedition to coöperate with the forces of the Indian princes in an attack upon the Portuguese. Such an expedition was sent out, but was utterly defeated. (Thomas Okey, "Venice," p. 191.)

The Venetians were deterred by several reasons from themselves taking advantage of the Cape route. In the first place, they had in Alexandria warehouses stored with rich goods, which they were afraid would be sacked by the Egyptians, should a part of the Venetian trade be transferred elsewhere. Then again the Strait of Gibraltar was controlled by Spain, which power would have levied duties on Venetian cargoes. Perhaps the most important reason was the realization that the Portuguese possessed a tremendous advantage in greater nearness and accessibility to the markets of northern Europe. (Brown, "Venice," p. 325.) When Cabral, the commander of the second Portuguese voyage to India, returned to Lisbon in June, 1501, with heavy cargoes of Indian wares, King Manuel sent word to the Venetians, by their ambassador, that they need no longer expect to load spices at Alexandria, for few would be found there, but that they might come to Lisbon for them. (Tschirch, p. 701.) The commercial decline of Venice, as well as that of Alexandria, dates from the discovery of the Cape route to India.

(*To be continued.*)

ASSOCIATIONS.

Many men, it seems to us, have an entirely erroneous idea of what an association is. Their attitude toward their trade association leads us to think that they view it as an entity entirely apart from themselves; a sort of machine into which they are invited to drop their annual dues, on the promise of receiving certain benefits in return.

Nothing could be farther from the true idea of an association, which the dictionary defines as "a combination of persons for the purpose of securing or accomplishing mutually desired ends."

To accomplish these ends it is needful that every member do his part. The work cannot be left wholly to the officers, be they ever so competent and willing. Neither can the chairmen of the various committees nor the entire committee membership do it all. They must have the counsel of the rank and file, and be made to feel that in what they undertake to do they have the backing of the entire membership. An association is not a little body or clique that promises to do something for others for pay in advance, but a body, small or large, that *tries* to do something for itself. Unfortunately for the success of association work, which depends to a large degree upon the measure of support received from those who are benefited, the benefits obtained cannot be confined to the membership, but go in almost equal measure to others who have not contributed anything in return.

These, by refusing to join in with the others, not only take to themselves benefits unearned by them, but they prevent the accomplishment of greater things for both themselves and others by withholding the aid that would in many instances turn the tide the right way. We believe that trade associations do a vast amount of good, not only for their members, but for all persons engaged in that line of trade. We believe they are worthy of much more general support than they generally receive, and, finally, we believe that much greater good would be accomplished if this support could be secured.

Membership in a trade association is not an expense, but one of the best paying investments that can be made.—*Rocky Mountain Druggist.*

SECTION ON COMMERCIAL INTERESTS AND SECTION ON EDUCATION AND LEGISLATION

DESIRABLE LEGISLATION AS AN AID TO MAINTAIN PHARMACY.*

BY J. H. BEAL.

The above topic, expanded to fit the complete idea in the mind of the Chairman at the time he requested me to make it the subject of a paper, would probably read about as follows: To what extent can legislation be utilized to advance the calling of the pharmacist and at the same time sufficiently conserve the interests of the whole community?

We desire to advance our professional and business interests because we are human, but we desire also to advance the general public interest, first, because we are good citizens, and, second, because we realize that class advantage gained at the expense of the general welfare can have only ephemeral existence, and that in the end the holders of special privilege must come to disaster.

In my salad days I wrote an essay with the sophomoric title "Education, Organization, and Legislation, the Means of Pharmaceutical Salvation," in which I allotted to legislation a very liberal share in the work of regeneration. I still believe in the saving force of this trinity, but have learned to regard legislation as a corrective of initiative rather than as a prime motive power to force initiative.

I have no patience with the theory that the law may be used to make profitable the business of any particular class of individuals, except in so far as such profit may be incidental to the result of measures which tend to bring the greatest good to the greatest number.

Pharmacy ought not to have, and I believe does not want, coddling legislation or special privileges gained at the expense of the remainder of the community. If the art of the pharmacist survives, it will be because it is able to serve the material interests of society better than the instrumentalities which seek to supplant it. Unless it can justify its existence by serving some useful part in the grand purpose of things we must expect it to pass like other arts that have outlived their usefulness.

It is easy enough to quote such high-sounding phrases as the "general welfare," the "public good," etc., but the question is: What do we mean by them, and how far are we sincere in coupling such phrases with measures that mean to serve our own particular advantage?

It is also easy enough to exalt ourselves into a state of mind which will enable us to regard our professional functions of such public importance that we can believe that whatever advances them is an agent for advancing the general welfare; but to make the facts square with these pretensions is a different proposition.

The only logical foundation for a law regulating admission to the practice of pharmacy is the necessity of protecting society against the consequences which might be expected to follow the dispensing of drugs and poisons by ignorant persons, or by persons so morally perverted that they will readily lend themselves to the service of evil, which, owing to the peculiar nature of the business, can be carried on with comparative immunity against detection. If the above reason be

* Read before the Section on Education and Legislation, A. Ph. A., San Francisco meeting.

the true one, and the imposition of certain educational and moral tests upon those who desire to engage in the business of selling drugs and poisons does really minister to public security, then existence of the law is justified, and the only important problem is to determine the height of the educational wall which must be climbed by those seeking admission. Doubtless the public advantage would be served by raising this wall to such a height that only those who were educated to the very highest degree of efficiency and of the very highest type morally would be granted the privilege of compounding and dispensing drugs, medicines, and poisons.

Such would be the character of the tests imposed in a theoretically perfect state, but we do not have a theoretically perfect state to experiment with, and therefore must fit our requirements to the present imperfect one. In other words, our ideals are subject to the practical limitations imposed by the necessity of fitting them into the social state in its present imperfect condition.

So far are theory and practice remote from each other in political and social spheres that to speak of a condition as ideal is virtually the same as declaring it incapable of realization. Not only is it impossible to impose upon the state the laws which we to-day would regard as ideal, but it is unlikely that we could devise statutes which would meet the views of future generations as to what ideal legislation should be. What might be regarded as highly desirable to-day might be regarded as the opposite by the next generation, because by then the direction of progress may have so altered that old ideals would no longer be applicable. The ideal stage-coach never reached fruition, because before the time came for it the stage-coach had been supplanted by other methods of transportation.

What may be regarded as ideal under one set of conditions might be regarded as the reverse of ideal under a different set of conditions. The practical limit always set to our efforts at reform is to make them fit into the conditions as they now exist, yet giving them a slant towards conditions as we would like to see them become.

In every step we take toward the future we must compromise with the present. Compromise is invariably the price of progress. It may sound fine and grand to declare that we will accept no compromise for what we believe to be the correct thing in legislation, but if we stand by this position we must give up the hope of progress. The present stubbornly insists upon its rights, and will yield concession only in return for concession. The uncompromising reformer is a clog on progress, by retarding the separate short advances which in the aggregate make great ones.

The Personal Interest of the Pharmacist in the Pharmacy Law.—We have said that the only logical ground upon which the state can impose restrictions upon the practice of pharmacy is the necessity of protecting the public health and general welfare, and not the pharmacist's private interests.

But, having imposed these restrictions upon one class of citizens, the state must impose them upon all. If only those who call themselves pharmacists are required to pass a special educational test, while others are permitted to exercise the same functions without supervision, then the state has not only imposed an unjust burden upon the pharmacist, but has failed in the effort to protect the public health, since the bulk of business will eventually flow to those who have the least extra burdens to bear and are therefore freest to meet competition.

The pharmacist's demand, then, is not that the state shall provide him with the means of livelihood, but that he shall not be discriminated against by the granting of special privileges and immunities to his competitors. He asks noth-

ing more than the fair requirement that the same test be imposed upon all who seek to perform the same functions.

In making such a demand, however, it must be remembered that general rules cannot be made to fit all special conditions and circumstances, and that theoretical consistency must sometimes yield to practical necessity.

It is easy enough to say that the inhabitants of sparsely-settled districts are as much entitled to the best of medical attendance and to the best of dispensing service as those who dwell in the cities, but, since it is confessedly impossible for them to obtain such services, they must be given the opportunity to provide themselves with the next best services obtainable.

It would be a fine thing for the physician if no one could obtain a dose of medicine without his order, and a fine thing for the pharmacist if he could have an absolute monopoly in supplying these doses, but both physician and pharmacist had better conserve their breath for the refrigeration of their porridge rather than to waste it in crying for something they are not likely to get.

There is no use butting our heads against the logic of circumstance. Physicians who practise in the country districts must be permitted to carry their own medicines with them; the people who live in communities distant from a drug store must have the privilege of satisfying their wants for simple drugs and package remedies at the nearby general store, and these privileges must continue until the state is ready to assume responsibility and supply medicine and medical attendance by parcel post, along with the catalogues of mail-order houses.

Not only must the physician be accorded a reasonable liberty in dispensing, but he must be ready to accord the pharmacist a like reasonable liberty, and not threaten him with a medical practice act for recommending simple cures for simple ailments.

There is a zone in medicine where the functions of physician and pharmacist have always overlapped, and always will overlap, regardless of codes and formal resolutions. Just where the division should come between the respective functions of physician and pharmacist is a matter of dispute, and the line is likely to shift with the interests and prejudices of the disputants. As located by the pharmacist it is likely to extend well into the domain which the physician claims as his own, and when located by the physician is likely to extend clear over the domain of the pharmacist and into the regions beyond.

One way of settling this dispute is for each profession to strive to set the boundary line as far over into the territory of the other as possible, in which case the side having the best politicians will probably obtain the most advantage, and this is the method to which physicians and pharmacists have been accustomed to settle their differences in the past.

It may sound like a paradox, but it is nevertheless true that physicians and pharmacists quarrel most when they remain separate, and agree best when they come together. When they come together in good faith and discuss their differences with open minds, many of the supposed grievances disappear into thin air, other points of disagreement are removed by explanations, and some fair ground for compromise can nearly always be found upon points concerning which exact agreement cannot be had.

The rational way, then, for pharmacists and physicians to determine the location of the boundary line to be established in the pharmacy law is by mutual agreement between representatives of their respective national, state, and local associations.

The first, or "Donnybrook," method has been tried without satisfaction to either side; why not give the second method a trial?

The Standardizing of Pharmacy Laws.—One of the first steps toward desirable legislation as an aid to pharmaceutical progress should be an effort to standardize, or bring about substantial uniformity in the principal features of the laws pertaining to pharmacy, and food and drugs in all of the states. This movement can be inaugurated by the preparation of a series of model forms, or patterns, based upon a careful study of existing laws, and modified to correct admitted defects which have been exposed by experience, in the preparation of which pattern-laws all of the associations, national, state and local, should be invited to take part, so that when they reach completion we may feel confident that they represent the best ideas capable of practical realization.

It is true that various so-called model laws have appeared from time to time, but usually they have been the work of a single committee and under the auspices of only a single association. That they have been of value is shown by the fact that subsequent legislation has been largely patterned after them; that they were not sufficiently discussed in advance is evidenced by the fact that in many cases they were largely amended before being offered to the various legislatures. If all of the associations had been consulted in the preparation of these models, it is reasonable to presume that they would have been considered satisfactory in a larger number of instances, and that there would now be substantial uniformity in the principal provisions of these laws, with only such minor differences in details as would naturally be necessary to meet the requirements of local conditions.

The Drafting of Pharmacy Legislation.—It is not possible to expect too much care in choosing the phraseology of pharmacy laws. Every word and phrase should be scanned with a jealous eye until it is certain that it expresses just what it is desired to express and nothing else.

No one can perfectly realize the possibilities of the English language until he has seen a name or phrase which he thought meant one thing construed by a court or administrative official to mean some quite different thing.

The measure should be made as far as possible self-interpreting. Such general terms as "derivatives," "synthetic substitutes," "physiological equivalents," "habit-forming drugs," "narcotic drugs," "poisons," "poisonous drugs," etc., should be avoided as pestilential, unless accompanied by qualifications and definitions which clearly limit the sense in which they are to be understood. The prime requisites of good statute law are definiteness and certainty, and these are impossible with the use of terms which are used in half a dozen different senses by different authors or by the same author at different times.

All of the intended requirements should be expressed in the law, and they should be made specific. It should not be left to some official bureau to read into the law, under the guise of rules and regulations, provisions and requirements which would have been objected to if they had been plainly stated in the original measure.

To construct a statute upon this plan means that more or less repetition will be necessary, that much detail must be introduced, and that the completed statute will not be easy reading. A statute devised for literary enjoyment will be cut up into crisp paragraphs of convenient size, each theoretically completely disposing of a phase of the subject by means of a few general terms, and the whole draft will be free from embarrassing exceptions and parenthetical clauses. Such a draft may be a literary joy, but after it has been twisted in the legislative mill by the injection of numerous exceptions into the midst of those general terms, and then has been rolled flat by the decisions of the Supreme Court, it will be a sight calculated to make angels weep.

HOW CAN THE COLLEGE OF PHARMACY BEST HELP THE STUDENT TO SECURE AN APPROPRIATE COMMERCIAL TRAINING?*

BY WILLIAM C ANDERSON.

The college of pharmacy that is founded on right principles will always have as its chief objects the stability and elevation of pharmacy and the conservation of the public health and welfare.

The stability of pharmacy depends to a great extent upon the proficiency, inclination, and character of those who are to perform its delicate and important duties, their ability to successfully meet the varying conditions in professional and commercial life, and the character of the service to the physician and the public.

The elevation of pharmacy will proceed as the college graduate, thoroughly equipped to render the most exacting, scientific, and accurate service under all circumstances involving the preparation, keeping, and distribution of drugs, stimulated with a high regard for his chosen profession and trade, and fortified by a keen realization of his obligations and responsibilities, recognizes its ideals and in his daily practice conscientiously strives to reach them.

The conservation of public health and welfare is the most vital problem which mankind has to face to-day, for activity ceases, enterprise fails, hope vanishes, and the brightest prospects are dispelled when health leaves.

The pharmacist's position in this respect is such that there is required the most intimate knowledge of the weapons by means of which the object can be obtained, accuracy in manipulation that safeguards every possibility of error and disaster, and a clear perception that engenders and fosters highest efficiency.

COLLEGE OF PHARMACY MUST PREPARE STUDENTS TO MEET ALL REQUIREMENTS.

The college of pharmacy, then, in carrying out its objects, must prepare the student to meet all of these requirements and thus be in a position to successfully and effectually carry on the work of his choice.

These requirements are so closely allied that one cannot be separated from the others without weakening, if not destroying, the whole.

The knowledge of drugs without the knowledge that will enable one to properly handle and combine them would be of little use to the pharmacist, and thorough knowledge both of the drugs and methods of manipulation would be dangerous in the possession of one who did not appreciate their dangers and activities, their uses and misuses.

Still, with all these requirements fulfilled, we find ourselves facing the fact that, with all his technical knowledge, professional skill, and high character, the college-trained man has but produced something that is practically useless until he enters the field of commerce and places it within the reach of the consumer. Commercial training, then, must of necessity form an important link in the chain of pharmaceutical knowledge.

EVERY PROFESSION HAS ITS COMMERCIAL SIDE.

I am aware of the fact that linking commercialism with professionalism is frowned upon by many in other professions and by some in the ranks of pharmacy,

* Read before the joint session of the Section on Commercial Interests and the Section on Education and Legislation, A. Ph. A., San Francisco meeting.

and, while it is conceded there is a danger-line in such connection that should carefully be avoided, that every profession has its commercial side cannot be denied; in fact, if it were not for the commercial advantages secured through a profession, many of our professional schools would soon close their doors on account of insufficient applicants for their degrees.

There may be some instances where the desire to continue a family record or noble impulse of the benefit one might be to his fellow-man has been the incentive to enter a profession, but in the great majority of cases I venture to predict that the one impelling motive was the thought of the means of earning a livelihood.

I believe the commercial side of a profession influences the standing of that profession, for the greater the financial success the easier high ideals may be established and maintained.

THE COMMERCIAL TRAINING OF THE PHARMACIST.

The commercial side of some professions consists principally of selling service and keeping accounts, and the commercial training required can be regulated accordingly.

The practice of pharmacy, however, usually entails extensive merchandising, and the commercial training of the pharmacist must be such as will enable him to protect his interests in every instance.

In addition to buying and selling goods, the conduct of his business involves the purchase or rental of real estate, banking, contracts, handling negotiable paper, etc., all of which requires a general knowledge of commercial law.

Attracting and keeping trade through advertising or other methods, the care of stock and its attractive display, treatment of customers and system in business are all important factors in the every-day work of the drug store.

The unsatisfactory conditions complained of by some retail druggists and the total failure of others are, in many instances, the result of deficiency in commercial knowledge, lack of appreciation of its importance to business success, or failure to properly apply one's knowledge and opportunities.

Too many retail druggists estimate their success by the amount of daily, monthly, or yearly sales. Increased expenses, higher prices for goods, and, in the absence of an inventory, which is a most general condition, reduction of stock are given little, if any, consideration.

The rapidity with which a business conducted under such deceptive conditions can be undermined and destroyed must be apparent to all and leaves the impression that in these days of rigid competition and changing business conditions, more than ever before, commercial training of the pharmacist and the rigid application of that training by him are most essential.

Losses through making contracts, signing legal documents, indorsing notes, and similar procedure have not been infrequent in our line of business, and such losses can frequently be traced to lack of appreciation of the responsibility assumed in each instance, and such lack of appreciation to ignorance concerning the simple principles of commercial law.

COMMERCIAL TRAINING MUST BE PART OF THE COLLEGE COURSE.

If, then, commercial training is a necessary requirement for the pharmacist, the college of pharmacy that would live up to its principles and do its whole duty has no alternative in the matter; excuses and evasion cannot be tolerated; it must include commercial training of its students as a part of its course of instruction.

It will not be surprising if there are found colleges of pharmacy or departments of pharmacy connected with some of our universities that will view this subject from a different standpoint and contend that the work of the college should be confined to professional training, and that commercial training should be a part of the experience secured through drug-store practice.

While not well founded, this contention should open the eyes of the pharmacists of the country to the fact that our colleges and departments of pharmacy are gradually separating into two classes.

One regards drug-store experience and training as insignificant, when compared with regents' counts, as a foundation for the study of pharmacy, and has as the chief aim the preparation of highly scientific men with earned degrees and counts that will enable them to reach out into still higher attainments and professions.

The other, while fully appreciating the value of a good preliminary education as a stepping-stone to advanced study, ever recognizes drug-store experience as essential to complete pharmaceutical training and has as its aim the thorough preparation of pharmacists for pharmacy.

Unless indications are misleading, the time is not far distant when pharmacists and boards of pharmacy will have to decide which of these classes is conserving the best interests of pharmacy and which is entitled to recognition.

The commercial training required by the pharmacist is so varied in its character, the college of pharmacy cannot hope to cover every phase of it in a thoroughly practical way.

Some of such training cannot be completed except by personal contact with customers; as, for instance, the sale of goods and general conduct incident thereto.

The teaching of commercial training, however, does not differ, to a great extent, from the teaching of other subjects that form an important part of the college curriculum, for the facts and principles taught and the practical exercises pursued can but serve as a safe and substantial foundation for that perfection in art and professional practices that can only be reached through practical application of the knowledge secured and repeated performance of the processes and methods involved.

The college of pharmacy can and should instruct its students in the proper and successful conduct of the drug store as constituted to-day.

This instruction should include buying and selling and the necessary transactions with reference to the same that affect the profits, contracts, and the rights and obligations of each party thereto, as well as different forms and characters of contracts, quality of goods purchased, quantity, buying, rebates and discounts, bills of lading, bills of sale, bills of exchange, receipts and discharges should all be given particular consideration.

The care and display of stock, window dressing, service, treatment of customers, handling accommodations and accounts, and system in business should be dealt with in such a way as to impress the student with their importance and induce him to adopt up-to-date and advantageous methods with reference to the same.

Instruction and practical work in book-keeping that will enable him to at least keep accurate and complete accounts with those with whom he does business and a correct record of his personal business affairs is absolutely necessary.

Correspondence, insurance in all its different forms, property, both real and personal, banking, mortgages, bonds, notes and deeds, with points of law bearing upon the same, should be given the attention their importance demands.

In fact, the course in a college of pharmacy, to be complete, must prepare the graduate to enter upon his life's work fully equipped to avoid the snares of business life, conduct a drug store in a successful manner, and give to the public most acceptable and beneficial service.

SOME DIFFERENCES BETWEEN PHYSICIANS AND PHARMACISTS: A PLAN FOR RELIEVING THEM.*

BY P. HENRY UTECH.

As pharmacists we have all observed the gradual changing character of our businesses within recent years and perhaps have often paused in reflection to wonder just where the procession is leading us. The pharmacist of to-day is not the pharmacist of a decade ago, nor again of yester-year. The changing times bring new conditions, and these must be met, studied, and applied if we are to play our part successfully in the great game of business.

Of the many basic causes underlying these changing conditions, perhaps the one most frequently heard is the complaint of the dearth in prescription writing by the physicians, and it is the aim and purpose of this paper simply to pave the way for a discussion of one phase at least of this problem—the suggestion of a possible plan of educating physicians along ethical lines—in the hope that the discussion ensuing may be both profitable and mutually helpful.

Chief among the reasons for the growth of non-prescribing by physicians is the one that pharmacists frequently make an excessive charge for prescriptions which call for such simple remedies as calomel or strychnine tablets, quinine pills, etc.—the charge being out of all proportion to the service rendered; and because of this extraordinary charge the physician, seeking his patient's every interest, in consequence, is compelled to give away gratis these simple remedies, thereby depriving the pharmacist of this particular source of revenue. If, then, this condition is a general one, it behooves us as pharmacists desirous of conserving our every interest to inaugurate some definite action or movement in order to clarify the situation and endeavor in some manner to bring about a mutual understanding or arrangement between the two professions.

In preferring these charges against our profession, I am inclined to think that the physician views the transaction from a purely selfish viewpoint. Many factors unknown to the average physician—or at least not taken into consideration by him—enter into the cost of properly compounding a prescription, such items as clerk hire, overhead expense, cost of containers, materials, etc.—all of which form the basis for the charge which, I dare say, in the vast majority of cases, is neither excessive nor illegitimate. Further, the true pharmacist regards it as a part of his mission to safeguard the interests of his patron's welfare, both physical and material, on the same plane as does the physician.

Generally speaking, I do not believe that this matter of unfair charging is warranted by the facts. While it is true that pharmacists do make a reasonable charge—*i.e.*, from 25 to 35 cents for a dozen pills or tablets when same are directed to be specially prepared, or whenever some pharmaceutical process is called into play—but the charge in such instances, I maintain, is within reason and therefore perfectly legitimate. On the other hand, I do not believe that the average pharmacist makes an excessive charge for a prescription calling for a dozen or two of the regular stock pills, tablets, or triturates. On the contrary, it has been proved that in most instances the charges have been too low rather than too high.

In order to obtain some definite data as to the actual profit on prescription work in general, Mr. F. W. Nitardy, of Denver, propounded this query in a very terse paper before the Colorado Pharmaceutical Association, outlining a summary of

* Read before the joint session of the Section on Commercial Interests and the Section on Education and Legislation, A. Ph. A., San Francisco meeting.

10,000 prescriptions from ten different pharmacists. All the factors of store management and expense were taken into consideration, and the analysis showed the average cost of the prescription to be 36⅔ cents, while the average retail price was 50½ cents, showing an average gross profit of approximately 27⅓ percent. As the cost for running expenses of the average store is at least 25 percent (and in some cases very much higher), you can readily see that the pharmacist's chief source of revenue no longer comes from the prescription department, as the general public and many physicians erroneously believe.

Another point of frequent misunderstanding, which ofttimes causes the pharmacist much embarrassment, is the practice of physicians in telling their patients the probable cost of a prescription, basing their conclusions generally on the size of package or container, irrespective of the cost of material or method of preparation required. To my mind this is a grievous error on their part, because physicians are invariably ignorant as to the cost of the ingredients of a prescription and therefore ought never to assume positive knowledge of the exact price to be charged therefor. Particularly is this true of present-day conditions, when the drug market is in a veritable state of upheaval and the druggist himself is ofttimes in a quandary to know just how to fix the proper charge. As illustrative of this point, I have in mind a physician who quoted an off-hand price to the patient for a given prescription, whereas the real charge was more than double. Upon investigation, I learned that the doctor had based his estimate on a price-list more than three years old. Instances such as these reflect on the integrity and good name of the pharmacist merely through thoughtlessness or lack of judgment on the part of the physician.

The foregoing, then, are merely a few of the many points of difference which are of frequent occurrence in almost every community. Doubtless there are many others, each community having its own peculiar and particular problems to contend with. The point I desire to emphasize is, that misunderstanding and petty differences do exist between the members of the two professions, many of which could be ameliorated and ofttimes entirely eliminated by the simple expedient of education or diplomacy properly applied.

How to successfully bring about this condition is the question. The one proper, honorable, and perfectly feasible thing to do is to begin at the very root of the matter and plan a joint meeting of the members of the two professions of any given city or community. Arrange for a banquet with the physicians as guests, if necessary. Our own experience has been that this effort has more than repaid for the expense involved. Wherever local medical societies exist, this can be easily arranged. At such a get-together meeting, plan to have one of the leading pharmacists and invite a prominent physician, each to make an address presenting his respective side of the question. The discussion following could not possibly fail to be of inestimable value to all concerned and would undoubtedly prove to be a large factor toward clearing up many of the petty differences which constantly arise between members of the two professions and which are a source of constant annoyance and embarrassment to the pharmacist.

In certain communities, wherever these differences are regarded as of sufficient importance, delegates could be appointed to present the whole matter later on, more exhaustively, first, at a meeting of the county medical society, and later before the state medical associations—these organizations being all affiliated bodies of the American Medical Association. By the faithful carrying out of these simple suggestions much desirable publicity would be given these all-important problems and an approach, at least, made in the right direction toward restoring the status and good name of the pharmacist.

ADVERTISING.*

BY W. C. ALPERS.

A paper on advertising written by the dean of a school of pharmacy seems at first sight to be an anomaly, and doubt might be raised whether a teacher could shed any new light on this often-discussed and still vexed question. My explanation—or, if you choose to call it, apology—for presenting this paper at the Commercial Section is twofold. In the first place, I have behind me a long service as a practical druggist, extending over more than twenty years, during which time I have had charge of pharmacies of all sizes and kinds; have been connected with manufacturing and wholesale interests, and have at times conducted advertising campaigns of large firms extending over the whole of the United States. Besides this personal experience, I have for many years carefully watched the advertisements of others, and from this standpoint alone—that is, from the standpoint of the reader of advertisements—it might not be without interest to listen to these observations. Let me speak on this second subject first.

An advertiser is inclined to value his advertisement, and consequently the expected results, in proportion to the time, thought, energy, and expense devoted to it. He ponders for days or weeks over a certain circular; he exercises the greatest care in the selection of the type, the typographical arrangement of the words, the quality of the paper, and other matters that he believes to be of importance. He spares no expense in producing the most elegant circular; he sends it out by personal letter; in fact, he does not neglect anything that seems to make for the success of his advertisement. The results are disappointing. They are in no proportion to his efforts. His disappointment grows into disgust, and he decides that advertising is a useless enterprise, and the money spent for it wasted. At other times he will write up a small circular on the spur of the moment; he pays but little attention to it, but distributes it because he feels that something ought to be done. He hardly expects any results, and, to his surprise, he discovers that every second customer will speak of that little circular and ask for the goods, and results are far beyond his boldest expectations.

When I myself awoke to this fact and discovered that the results were seemingly in no proportion to the effort and expense, I naturally tried to find the cause of this apparent contradiction, and the question arose in my mind: What constitutes a good advertisement? A question that has not been answered satisfactorily to-day, although thousands of experts have tried to answer it, and millions of dollars been spent to discover the answer. An observing tradesman will soon recognize that he must look to the public for an answer; that the success of an advertisement is determined by those who read it, and not by him who writes it. He must read their thoughts and use them so that the circular will sound in their minds like an echo of their own thinking.

Another important point is to fix the object of the advertisement and to be clear on that point. Is it your intention to put new things, new articles, new combinations before your old customers, or do you wish to gain new customers for the things you have had on sale for years? According to these two objects your advertisement must be shaped differently. You can introduce new articles by samples or by depicting results; by bringing their existence again and again to the notice of your customers. Persistent efforts are here needed, and you cannot repeat the same

* Read before the Section on Commercial Interests, A. Ph. A., San Francisco meeting.

argument often enough. This fact is well known to the manufacturers of proprietary articles, who will send you thousands and thousands of circulars to be used as counter wrappers and bring the articles to the notice of *your* customers. Unfortunately there are a good many druggists who accept such circulars and distribute them free to their customers, and, instead of training them to look to their local druggist as a source of information on remedies for small ailments, induce them to buy these ready-made proprietary goods on which the profit is generally insignificantly small. If, therefore, such a method of advertising appeals to you, by all means have your own circulars printed and advertise on them some article of your own make.

By these methods new customers are but rarely gained. You reach only those who already deal with you. You must go outside of your store, you must increase the number of your friends and must bring your store, your goods to the notice of people that you did not know before and who do not know you. For this purpose, get a list of people that live in your neighborhood. Use your own ingenuity in getting such a list. Watch over it and correct and extend it from day to day. In large cities you can sometimes employ the boys in your neighborhood. Let them go from house to house in a certain block or a certain street and find out who lives in each house. By paying them a cent for so many names you can soon compile a list of two, three, or five thousand prospective customers, or even more. Arrange this list in two different ways: first, alphabetically, and, second, according to streets and numbers. Write to all of them, or send them circulars, but always word your circular in such a way that it appears as a personal letter. If you tell Mrs. Smith that her beautiful complexion can be preserved for years, and even improved, by your cold cream, it will appeal to her much more than by telling her that John Brown's Cold Cream will remove freckles, blotches, and other blemishes of the skin. If you send John Miller a circular praising the advantages of your digestive pill, he will read it and put it aside, but if you word your circular in such a way as to tell him that the discomfort he felt after his large, big dinner could have been avoided by quietly slipping down one or two of your digestive pills with his demitasse, he will remember it much better. This drafting of a circular to make it appear a personal appeal to the person who reads it is a skill and an art worthy to be studied and practised by every enterprising business man. But this emphasis of the personality does not only refer to the receiver of the advertisement, but, in a much greater degree, to the writer. Whatever he sends out, let it bear the stamp of individuality, and this stamp must be the same, no matter to whom you write or on what subject. All your letters, all your advertisements must have some distinctive mark by which they are recognized; which makes them stand out as a class of their own; which compels attention and comment. A well-chosen trade-mark, such as Castoria, Listerine, and others, emphasizes this truth. But, as it is impossible to trade-mark everything in your store, you should give your circulars a distinctive mark that is the result of brain-work, that represents you in your own individuality. How to impress this individuality on all your advertisements must be left to yourself. It can be done by certain phrases, by certain catch-words with which every circular begins; by pictures of a certain kind, or by many other designs and methods.

It may be worth while to tell you, at this occasion, the story of the success of the manufacturer of one of the best known talcum powders. He was a druggist of moderate means in Newark, New Jersey. I knew him well. At a meeting of the New Jersey Pharmaceutical Association we sat together at Atlantic City, near the beach. I noticed that he was discouraged and despondent. I asked him the cause.

" I will tell you," he said. " I am discouraged because I despair of success. My case seems hopeless. I started this talcum powder expecting great things from it. I mortgaged my store; I mortgaged my house; I borrowed money from all my friends; I know no one of whom I could ask for more. The money is all gone; it disappeared as if swallowed up by a rat-hole. I am at the end of my resources." There was a long pause. Suddenly he jumped up, excited, full of life. " I got it! I got it!" he exclaimed. " I know where I made my mistake." I looked at him in surprise. " You see that," he said, pointing to a fence not far from us. There was on that fence an advertisement of chewing gum, consisting of a long row of heads of the manufacturer; the first one very large, the others gradually becoming smaller. It is a well-known advertisement that everybody has been. " That row of heads," said my friend, " teaches me what I must do. I must be personal in my advertisements; I must put my individuality into them. I must put before the public something by which they will remember me and my talcum powder." From that day he changed his advertisements, on the tin cans of his talcum as well as on the fences along the highways. Where there had been the figure of a laughing baby, he put his own face, and it was reproduced on thousands of fences and in thousands of journals all over the United States. The sale of the talcum increased from that day and reached enormous proportions. This man discovered the secret of a good advertisement: Put your individuality into it in whatever way you choose.

As a proof of the correctness of this statement, I will show you some of my own advertisements [1] that I used to great advantage when unexpected and violent competition threatened to overcome me. You will notice, these advertisements consist of a small figure with a large head, the latter always being my own photograph, and the figure always represented something seasonable—a base-ball player, the cook, a man in a canoe, a bicycle rider, a man in an automobile, a baby, a skater, a policeman, and so on. From this figure the key to the advertisement was taken, and seasonable articles advertised to the public. The circulars—the paper for which was always of the same color—were distributed every Sunday by the newsdealers in my neighborhood, with the Sunday papers, about 2500 every Sunday. The results were marvellous, and the advertisement so pleasing to the public that a great many of my customers kept a full set of them and often asked me for additional copies.

In presenting these advertisements to you I do not wish to say that this is the only, or even the proper, way of advertising your business. You must follow, in this respect, your own inclination and be guided by local conditions. The point that I wish to emphasize is this: If you adopt advertising as a means of improving and increasing your business, you must not do it in a haphazard way. Have a fixed object in view. Lay out a plan for a whole year. Follow it up strictly and persistently. Do not be discouraged by seeming failures, and, above all, put all your efforts and all your individuality into this work.

[1] The author accompanied the paper by a series of circulars he had successfully employed, embodying the idea of individualizing the advertisement.

argument often enough. This fact is well known to the manufacturers of proprietary articles, who will send you thousands and thousands of circulars to be used as counter wrappers and bring the articles to the notice of *your* customers. Unfortunately there are a good many druggists who accept such circulars and distribute them free to their customers, and, instead of training them to look to their local druggist as a source of information on remedies for small ailments, induce them to buy these ready-made proprietary goods on which the profit is generally insignificantly small. If, therefore, such a method of advertising appeals to you, by all means have your own circulars printed and advertise on them some article of your own make.

By these methods new customers are but rarely gained. You reach only those who already deal with you. You must go outside of your store, you must increase the number of your friends and must bring your store, your goods to the notice of people that you did not know before and who do not know you. For this purpose, get a list of people that live in your neighborhood. Use your own ingenuity in getting such a list. Watch over it and correct and extend it from day to day. In large cities you can sometimes employ the boys in your neighborhood. Let them go from house to house in a certain block or a certain street and find out who lives in each house. By paying them a cent for so many names you can soon compile a list of two, three, or five thousand prospective customers, or even more. Arrange this list in two different ways: first, alphabetically, and, second, according to streets and numbers. Write to all of them, or send them circulars, but always word your circular in such a way that it appears as a personal letter. If you tell Mrs. Smith that her beautiful complexion can be preserved for years, and even improved, by your cold cream, it will appeal to her much more than by telling her that John Brown's Cold Cream will remove freckles, blotches, and other blemishes of the skin. If you send John Miller a circular praising the advantages of your digestive pill, he will read it and put it aside, but if you word your circular in such a way as to tell him that the discomfort he felt after his large, big dinner could have been avoided by quietly slipping down one or two of your digestive pills with his demitasse, he will remember it much better. This drafting of a circular to make it appear a personal appeal to the person who reads it is a skill and an art worthy to be studied and practised by every enterprising business man. But this emphasis of the personality does not only refer to the receiver of the advertisement, but, in a much greater degree, to the writer. Whatever he sends out, let it bear the stamp of individuality, and this stamp must be the same, no matter to whom you write or on what subject. All your letters, all your advertisements must have some distinctive mark by which they are recognized; which makes them stand out as a class of their own; which compels attention and comment. A well-chosen trade-mark, such as Castoria, Listerine, and others, emphasizes this truth. But, as it is impossible to trade-mark everything in your store, you should give your circulars a distinctive mark that is the result of brain-work, that represents you in your own individuality. How to impress this individuality on all your advertisements must be left to yourself. It can be done by certain phrases, by certain catch-words with which every circular begins; by pictures of a certain kind, or by many other designs and methods.

It may be worth while to tell you, at this occasion, the story of the success of the manufacturer of one of the best known talcum powders. He was a druggist of moderate means in Newark, New Jersey. I knew him well. At a meeting of the New Jersey Pharmaceutical Association we sat together at Atlantic City, near the beach. I noticed that he was discouraged and despondent. I asked him the cause.

" I will tell you," he said. " I am discouraged because I despair of success. My case seems hopeless. I started this talcum powder expecting great things from it. I mortgaged my store; I mortgaged my house; I borrowed money from all my friends; I know no one of whom I could ask for more. The money is all gone; it disappeared as if swallowed up by a rat-hole. I am at the end of my resources." There was a long pause. Suddenly he jumped up, excited, full of life. " I got it! I got it!" he exclaimed. " I know where I made my mistake." I looked at him in surprise. " You see that," he said, pointing to a fence not far from us. There was on that fence an advertisement of chewing gum, consisting of a long row of heads of the manufacturer; the first one very large, the others gradually becoming smaller. It is a well-known advertisement that everybody has been. " That row of heads," said my friend, " teaches me what I must do. I must be personal in my advertisements; I must put my individuality into them. I must put before the public something by which they will remember me and my talcum powder." From that day he changed his advertisements, on the tin cans of his talcum as well as on the fences along the highways. Where there had been the figure of a laughing baby, he put his own face, and it was reproduced on thousands of fences and in thousands of journals all over the United States. The sale of the talcum increased from that day and reached enormous proportions. This man discovered the secret of a good advertisement: Put your individuality into it in whatever way you choose.

As a proof of the correctness of this statement, I will show you some of my own advertisements [1] that I used to great advantage when unexpected and violent competition threatened to overcome me. You will notice, these advertisements consist of a small figure with a large head, the latter always being my own photograph, and the figure always represented something seasonable—a base-ball player, the cook, a man in a canoe, a bicycle rider, a man in an automobile, a baby, a skater, a policeman, and so on. From this figure the key to the advertisement was taken, and seasonable articles advertised to the public. The circulars—the paper for which was always of the same color—were distributed every Sunday by the newsdealers in my neighborhood, with the Sunday papers, about 2500 every Sunday. The results were marvellous, and the advertisement so pleasing to the public that a great many of my customers kept a full set of them and often asked me for additional copies.

In presenting these advertisements to you I do not wish to say that this is the only, or even the proper, way of advertising your business. You must follow, in this respect, your own inclination and be guided by local conditions. The point that I wish to emphasize is this: If you adopt advertising as a means of improving and increasing your business, you must not do it in a haphazard way. Have a fixed object in view. Lay out a plan for a whole year. Follow it up strictly and persistently. Do not be discouraged by seeming failures, and, above all, put all your efforts and all your individuality into this work.

[1] The author accompanied the paper by a series of circulars he had successfully employed, embodying the idea of individualizing the advertisement.

SCIENTIFIC SECTION

RENAL FUNCTIONATION: THE PHENOLSULPHONEPHTHALEIN TEST.*

BY H. A. B. DUNNING.

Something positively non-toxic, non-irritating, rapidly and largely eliminated, quickly and easily applied; something that would give reasonably accurate showings, in the hands of the average clinician, that might be used as a renal functional test, had been anticipated for a long time and with considerable impatience by the careful surgeon and the painstaking practitioner of medicine. Various processes and substances had been tried and found more or less useful; were found to have advantages for some more specific determination, but wanting and inefficient in others, while all failed in fitness for very general application.

Now, after a world-wide investigation and trial of more than three years, it is almost universally conceded by broad-minded medical men that, for ascertaining the eliminating power of the two kidneys or the special ability of either kidney, the ideal test is closely approached by phenolsulphonephthalein.

This chemical, phenolsulphonephthalein, was first produced by Dr. Ira Remsen; later, in 1898, it was further investigated and described by one of his students, Michael Druck Sohon (see American Chemical Journal, vol. 20, No. 4, page 263), as:

A bright red crystalline powder, somewhat soluble in water, more so in alcohol, from which it was precipitated by ether as a yellowish-red crystalline powder, which on removal from the liquor instantly gave up ether, and solidified to a dark mass, which was apparently the same material.

The dilute alkaline solution is somewhat purer red than that of phenolphthalein; the more strongly alkaline solutions are purple. It is about as sensitive to alkalies and acids as phenolphthalein. The color does not disappear as readily on heating, and it might be used as an indicator with ammonia.

In a preliminary report, by the Council on Pharmacy and Chemistry, American Medical Association (see The Journal, vol. lxii, No. 4, page 298), it is described as follows:

Phenolsulphonephthalein is a bright red crystalline powder, slightly soluble in water and in alcohol with formation of a yellow solution; it is insoluble in ether. It is soluble in dilute alkalies with formation of a solution whose color is a purer red than alkaline phenolphthalein, while a strongly alkaline solution is purple. In solution it is sensitive to carbonic acid just as phenolphthalein is. It is readily soluble in sodium carbonate solution, and shows stronger acid properties than any of the related phthaleins. The substance at first has a slightly sweetish taste which changes to a disagreeable bitter taste.

The substance is marketed in the solution of its monosodium salt only; the solution (6 mg. to 1 Cc.), biologically standardized and sterile, is contained in hermetically-sealed ampoules, each ampoule holding more than enough for a test.

It was Dr. John J. Abel and his associate, Dr. L. G. Rowntree, while investigating the pharmacodynamics of all the phthaleins, some years after the publication by

* Presented to Scientific Section, A. Ph. A., San Francisco meeting.

Sohon, who discovered the remarkable manner in which normal kidneys disposed of this compound—phenolsulphonephthalein—fully 85 percent of an injected quantity being thrown off through renal functionation within two or three hours.

Doctors Abel and Rowntree, of the Pharmacological Department of the Johns Hopkins Medical School, further examined the substance pharmacologically and found it to be even less toxic than sodium chloride. See The Journal of Pharmacology and Experimental Therapeutics, vol. 1, No. 6, page 595, from which is quoted as follows:

The pharmacology of this substance has been studied by Abel and Rowntree, who have shown that properly-prepared solutions of the sodium salt can be injected under the skin without the slightest evidence of an irritant action; that the drug can be administered by mouth without untoward effects of any kind; that the administration of the drug in 0.1-gramme doses or less by mouth is followed by its appearance in the urine in one to one and a half hours; that the subcutaneous administration is followed by the appearance of the drug in the urine within ten minutes. The method of its excretion in the bile and urine and its absorption from the bile in the intestine was also investigated. Following the subcutaneous injection of 1 gramme, the drug appears in the bile in high concentration in one to two hours. It is then reabsorbed by all parts of the intestines, and only a trace, even after these large doses, can be found in the stool.

The effect of 1-gramme doses of the drug upon the kidneys of dogs was also studied, and in no case was albumin, sugar, casts, or other abnormalities found. It was found, however, that large doses given intravenously to rabbits exerted a mild diuretic action.

Further investigation yields additional evidence of the non-toxicity of this substance. One of us (R.) has tested the effect of this preparation on rats infected with various strains of trypanosomes. In one instance 0.3 gramme was administered to a 200-gramme rat and repeated without any untoward effect.

A small kitten, weight 650 grammes, was given 0.115 gramme of phenolsulphonephthalein subcutaneously. The stool showed only a trace of the drug, while the urine was red for sixty to seventy-two hours following the injection. No toxic symptoms were present.

This reference is from the published study of Drs. L. G. Rowntree and J. T. Geraghty, to whom is due the credit for first using phenolsulphonephthalein as a renal test and for first making practical and successful applications of it to clinical diagnosis. These investigators acknowledge assistance in their efforts to Doctors Abel, Young, Slagle, Barker, Thayer, McCrae, Hobelman, Merrill, Kelly, and Richardson, also to H. A. Brown Dunning, Phar.D., who made and supplied most of the phenolsulphonephthalein used in their investigations and who, through a long series of experiments, succeeded in modifying the original methods of producing phenolsulphonephthalein and, still more important, originated a method of purification which yields this substance, pure to a degree entirely satisfactory to the originators of the test.

REMARKS ON PHENOLSULPHONEPHTHALEIN.

Phenolsulphonephthalein was first prepared by Ira Remsen and Sohon by heating in hot-air bath at 130° C. for 24 hours orthosulphobenzoic acid anhydride with twice the molecular equivalent of phenol. The resulting resinous mass is thoroughly disintegrated by boiling water until free from phenol. The substance is then collected upon a filter and thoroughly washed and, finally, is transferred to porous plates and dried, or it may be dried in a current of warm air on filter-paper. While the mass has a beautiful deep-green fluorescence, which presents a

blood-red streak when the surface is broken, the washed and dried powder varies in color from a beautiful vermilion red to a brownish red, depending upon its fineness. The substance is soluble in cold water to a slight degree only, yielding a deep-yellow solution, which becomes Bordeaux red upon the addition of one molecule of sodium hydroxide, giving a beautiful purple with excess of the alkali. Similar to phenolphthalein, the aqueous solution of the sodium salt is effected by carbonic acid, but the color of the dilute solution seems to be unaltered, if kept in a tightly-stoppered vessel. The substance is soluble in alcohol, but insoluble in ether. The starting-point of Remsen and Sohon was commercial saccharin, containing about 60 percent benzoic sulphinide. It may be of interest, at this point, to state that commercial saccharin, at the present time, is practically pure benzoic sulphinide.

Following the method of Remsen and Saunders, the saccharin in aqueous mixture was boiled with hydrochloric acid until solution of the benzoic sulphinide was effected and converted into the acid ammonium salt of orthosulphobenzoic acid, which is evidenced by the disappearance of the sweet saccharin taste. The undissolved matter is parasulphaminebenzoic acid, from which the acid ammonium salt in solution is separated by filtration, subsequent to concentration and cooling of the mixture. The acid ammonium salt was decomposed with potassium hydroxide in hot concentrated solution, thereby forming the potassium salt. The acid potassium salt was precipitated from the cool solution by the addition of concentrated hydrochloric acid. The washed and dried potassium salt was then treated with phosphorus pentachloride and the cool mass extracted with benzene, which brings into solution the anhydride of orthosulphobenzoic acid.

The method adopted by Slagle, who prepared the " phthalein " at the Johns Hopkins Medical School for experimental pharmacological purposes, is, in a large measure, selected from the work of Remsen and Sohon, Remsen and Saunders, and Remsen and Dohme. Slagle started with saccharin and produced the acid ammonium salt of orthosulphobenzoic acid in the way mentioned above, then treated the acid ammonium salt with phosphorus pentachloride, producing the chloride of the acid, which is a yellow, oily liquid of high specific gravity, possessing a peculiar, sweetish, unpleasant mouse-like odor. After thorough washing, the chloride is boiled with water, which decomposes it, with the formation of orthosulphobenzoic acid, which, upon evaporating to dryness and heating to remove hydrochloric acid, is mixed with phosphorus pentoxide and distilled to obtain the anhydride of the acid, which distils as an oily liquid at a high temperature, quickly congealing to a white, opaque, crystalline mass in the receiver. The value of the substance for use in medicine was determined, under the direction of Dr. John J. Abel, by Dr. L. G. Rowntree, of the Pharmacological Department of the Johns Hopkins Medical School, while the clinical work was done by Dr. J. T. Geraghty, of the hospital staff. These investigators learned, after extensive experimentation, that when " phthalein " is injected subcutaneously the entire amount is excreted by the normal kidneys in a limited time: from 40 percent to 60 percent during the first hour after its first appearance in the urine, which requires about ten minutes, and about 60 percent to 80 percent within two hours. The essential features of the test are as follows:

One Cc. of the solution containing 6 milligrammes of " phthalein," as a monosodium salt, is injected into the arm or the buttocks; after about ten minutes, the " phthalein " may be detected by catheterizing and passing the urine into a test-tube containing solution of sodium hydroxide, thereafter for one hour the entire amount of urine excreted is collected. The present procedure is to collect excreted urine for one hour and ten minutes from time of giving injection. Sufficient

sodium hydroxide solution is added to make alkaline, and the whole is diluted to 1000 cubic centimetres. The quantity of " phthalein " eliminated is determined, colorimetrically, by comparing the specimen collected, as above stated, with a standard solution of " phthalein " prepared by diluting 1 Cc. of " phthalein " solution containing 6 milligrammes to 1000 Cc. with water made alkaline. This comparison is most accurately made through the use of a colorimeter. The value of the test depends upon the following facts: 40 percent to 60 percent of " phthalein " injected is eliminated by the normal kidneys within one hour, irrespective of the quantity of urine excreted. If the amount of the substance eliminated is very low, 5 percent to 30 percent, then the kidneys are not functionating properly.

This diagnostic test of renal efficiency has attracted widespread interest, not only in this country, but in England, France, Germany, Japan, and Australia.

LABORATORY OF HYNSON, WESTCOTT & COMPANY, Baltimore, Md.

PROGRESS IN THE CULTIVATION OF MEDICINAL PLANTS.*

BY HENRY KRAEMER, PH.D.

For the past fifteen years I have supported the theory that the cultivation of medicinal plants in the United States was not only practicable but essential for the scientific development of manufacturing pharmacy. As long ago as 1902 Doctor True wrote me as follows:

" This matter of the domestication and cultivation of our native drug plants is one that is interesting me a great deal and seems likely to take some of my time for the immediate future. I hope I may be able to trouble you often in connection with this attempt to open up a new line of agricultural work. I have no doubt that the right man will be able to get rich by cultivating drugs, if we can find methods of handling the articles so as to produce a first-class product."

During these years the work has been progressing very slowly and yet with very great satisfaction. Many students of botany have had their small gardens in which they grew a limited number of plants. I well recall that the late Professor John M. Maisch had a small garden in West Philadelphia, and so have others had these gardens. My first work was done in a side yard. In 1907, when the Foods and Drugs Laboratory of the Philadelphia College of Pharmacy was built, a lattice platform was laid on the top of the roof and we built a roof garden. We constructed our boxes, purchased about ten cart-loads of good soil, and went ahead planting trees, shrubs, and vines. We arranged beds with lattice for those plants that required shade. Out of an old zinc-lined trough we constructed a Jersey bog, in which iris, cat-tails, drosera, sarracenias were planted and bloomed. In the fall of 1909 the college erected a good green-house. During these years we have had under observation over 300 different species of plants. Most of these plants have been used in connection with investigations of crude drugs. In addition, the work has given us valuable data in regard to growing plants by means of seeds and cuttings, the drying and curing of them, and, in a few instances, of extracting their constituents.

It is not so much of my own experiments that I want to talk about to-night as it is the progress of the work done by others. I desire to refer to the splendid equipment of green-houses and grounds by Prof. E. L. Newcomb at the University of Minnesota. Professor Newcomb was associated with me when we

* Read before the Philadelphia Branch, A. Ph. A., December 13, 1915.

began our work at the Philadelphia College of Pharmacy, and I look forward to the time when every college of pharmacy will have gardens of its own. I also desire to commend Professor Newcomb's attitude in making the products of the gardens useful to the pharmacists of his state. He is, as you know, supplying the crude drugs which he raises to the pharmacists, and I understand that there is a greater demand for them than he can supply.

In addition, several of our large manufacturing houses have drug farms and are harvesting crops on the same scale as the farmer. In our own vicinity, H. K. Mulford Company is growing on an extensive scale belladonna, digitalis, hydrastis, and cannabis, and is considering the growing of a large number of other medicinal plants. I will show you by means of lantern slides something of the work which is done by Burroughs, Wellcome & Co. at their farm which borders the little village of Darent, near Dartford, England; also the views of the farms of Eli Lilly & Co., near Indianapolis, Ind.

There is very great interest in the subject of cultivation of medicinal plants; unfortunately most of the inquiries we receive do not reveal genuine interest. They are usually from farmers who deplore the low prices they are receiving for their farm products, or from pharmacists who are dissatisfied with the profits of the drug business. To all such persons I feel rather conservative in encouraging them to take up this work, as it will require patient labor and incessant toil in order to secure any results. If one, however, has something of the pioneer instinct in him, and is capable of putting any product on the market, he ought to succeed.

Of course, one needs to have some practical experience in the growing of plants, but this can all be acquired through the practical courses at the state experimental stations, although nothing will take the place of actual practical work. In my new book on "Applied and Economic Botany" I have devoted a chapter to the "Cultivation of Medicinal Plants." This gives very valuable information for the beginner. Dr. W. W. Stockberger has given in a recent Farmers' Bulletin some interesting facts on drug plants under cultivation. The most comprehensive article on the literature of the cultivation of medicinal plants is given by Dr. Frederick Kilmer in his paper read before the National Association of Manufacturers of Medicinal Products, Waldorf-Astoria Hotel, New York City, February 8, 1915.

In conjunction with the large number of lantern slides there were shown between forty and fifty drug specimens which had been grown in the United States during the past summer. The principal reason for the engaging in the cultivation of medicinal plants is in order to establish a uniformity in the quality of vegetable drugs. Of course, improvements can be obtained, and the work already accomplished in this country justifies the prediction that, as in farm and economic products, the grower of drug plants can successfully meet these questions. The next year ought to witness a material increase both in the number of crops grown and their yield. If there are any agreements or treaties between the United States and foreign countries which would seem to restrict competition of drugs produced in this country with those imported, it is very desirable that everything be done to place the United States on an independent basis. The lesson of the past two years should cause us to seriously consider the necessity of protecting our own sick and not require them to pay exorbitant prices for the lack of supply of remedial agents.

CONTRIBUTED AND SELECTED

AERIAL OR GASEOUS DISINFECTION.*

BY SEWARD W. WILLIAMS, PH.C., F.C.S.†

3. *Do You Think the Conclusions Reached by Mr. Adams in the Ladies' Home Journal for March (See Quotation in Enclosed Paper) Justified?*

[This was the quotation:

I am assuming in what follows, only two points: That you are an adult, and a non-consumptive at present. On that hypothesis:

1. You have had tuberculosis.
2. You have cured yourself of it.
3. In the process of curing yourself you have so fortified your body against it that you are safe against "catching" the disease from any other person.
4. If you now become a consumptive it will be through a relapse and *by your own fault.*]

ARIZONA.—[This question not answered.]

ARKANSAS.—Dr. C. W. Garrison: No.

DISTRICT OF COLUMBIA.—Dr. W. C. Woodward: Mr. Adams is in a position to speak dogmatically with respect to this matter. I am not.

FLORIDA.—Dr. J. Y. Porter: I cannot wholly agree with Mr. Adams's conclusions that tuberculosis is never contracted by adults through contact with persons suffering with the disease. I believe that such infection does occur through the moist sputum, in which the bacillus is kept in a moist and active state. I very much doubt the possibility of transmission by dried sputum.

IDAHO.—Dr. W. R. Hamilton: I do not know. My experience in fumigation has been rather limited, but, until I receive more definite information, much prefer to continue using formaldehyde.

ILLINOIS CENTRAL R. R.—Dr. A. E. Campbell: No, I do not.

INDIANA.—Dr. J. N. Hurty: I think the conclusion reached by Mr. Adams, Dr. Chapin, Dr. Goldwater and other close observers will likely be found correct.

KANSAS.—Dr. O. D. Walker: Formaldehyde as it is generally used as a disinfectant is of little real value. Under proper treatment it is quite effectual.

MAINE.—Dr. A. G. Young: No, I do not.

MARYLAND.—Dr. J. S. Fulton: I do not regard Mr. Adams's statement as a "conclusion." It is simply a rather vivid statement; and for a certain large fraction of the adult population, it is 75 percent true.

MISSOURI.—Dr. G. B. Schultz: Yes.

NEBRASKA.—Dr. E. A. Carr: No. (We should not cast ourselves overboard in mid-ocean until we see another boat in sight.)

NEVADA.—Dr. M. F. Boyd: I consider that Mr. Adams's statements, *under the conditions he names,* and in the light of our present knowledge, to be justifiable and conservative.

---

* Read before Chicago Branch of the American Pharmaceutical Association, November 16, 1915. Continued from page 194, February issue.

† Scientific Department, Bauer & Black, Chicago.

NEW YORK.—Dr. F. M. Meader: Yes.

Dr. E. H. Porter: The conclusion is not yet justifiable and should not be put forth to the public.

Dr. J. J. O'Connell: I have not read the article by Mr. Samuel Hopkins Adams to which you refer. I do not see that his four conclusions logically follow his two assumptions. In other words, it does not seem to me to be a necessary sequence of the fact that you are an adult non-consumptive at present, that you formerly had tuberculosis and have cured yourself of it, and in curing yourself have so fortified your body as to make it safe against reinfection. Of course if you had tuberculosis and have cured yourself, that settles it. You are cured and must be reinfected in order to have the disease a second time. I think it highly probable, however, that a retardation of the growth of the causative factor by a removal of the patient from conditions favorable to such growth into conditions unfavorable to such growth has frequently been mistaken for a complete cure, and that in such cases the organisms are dormant, but not dead, and await only a restoration to conditions favorable to them to renew their malignant activity.

Dr. M. C. Schroeder: No, they are not justified; while reasonable care and personal hygiene may protect a consumptive individual from reinfection, he is still subject to sources of infection which may be beyond his control.

NEW MEXICO.—Dr. L. G. Rice: No.

NORTH CAROLINA.—Dr. J. H. Way: Hardly; while the degree of tuberculophobia induced has been excessive, and doing positive harm in some places, yet, I would not wholly have people feel that they may associate intimately with careless spitting consumptives without taking precautions.

OHIO.—Dr. E. F. McCampbell: The quotation from Mr. Adams's article in the Ladies' Home Journal is to the effect that adults who are non-consumptive have had the disease and have been cured of it. Any further infection must come from the person's own body and not from some other person. In other words, will be a relapse. This I believe is generally true.

OREGON.—Dr. C. S. White: No. I question the authenticity as to whether or not we have all had tuberculosis.

PENNSYLVANIA.—J. P. Remington, Ph.M., F.C.S., Chairman Committee of Revision U. S. Pharmacopœia; Dean of American Pharmacy:

[On the way to the San Francisco meeting, while chatting with Professor Remington, I asked his opinion on this question, and the experience he related showed so positively that an adult *may* contract tuberculosis from one ill with that disease that I asked to be favored with a written account. This he has very kindly supplied, as follows:]

Charles Frederick Zeller, Ph.G., died April 7, 1886, from tuberculosis. The history of this case attracted my attention to the communicability of the tuberculosis germ by oral infection. Professor Zeller was my assistant in pharmacy for ten years and during this time was the picture of health. He was a young man of strict integrity, vigorous in health, and a physique which enabled him to rise early in the morning and work in a drug store until eleven o'clock at night. He was strictly temperate, using neither alcohol nor tobacco, very fond of his parents, and devoted to his sister. This sister in 1880 nursed an intimate girl friend through a fatal illness, which was termed "galloping consumption."

The idea of the communicability of tuberculosis at that time was not held by physicians. Frederick's sister frequently kissed her friend, particularly when she left her in the evening to return to her home. Miss Zeller was in splendid

health and there was no history of tuberculosis in the father and mother or ancestors.

Shortly after the death of the friend of Miss Zeller, symptoms of tuberculosis appeared and Miss Zeller died in a few months. Frederick was of an affectionate disposition and he often kissed his sister. Although everything was done by the well-to-do parents to save their daughter by employing the best physicians and specialists, she died within a year. Shortly after the sister's death, Frederick manifested symptoms and the progress of the disease in his case was very rapid, and on April 7, 1886, after a violent hemorrhage from the lungs, this strong, healthy man passed away.

If my recollection serves me, the sister was about four years younger than Professor Zeller, who was twenty-eight years of age when he died.

He was a man who ridiculed the complaints of his friends about trifling ailments and accused them of having vivid imaginations and a desire to obtain sympathy. He was not subject to ordinary colds and believed that the way to get rid of these ailments was to pay no attention to them. He undoubtedly reasoned that when he himself had a cold the best way to proceed was to ignore it and his splendid vitality always prevailed and his rosy cheeks and cheerful disposition gave one the impression of health far beyond the average. Barely six months elapsed from the time of infection until the time of his death.

These events following each other so rapidly convinced the writer that tuberculosis, like so many diseases, was produced by the presence of a germ. Soon after Professor Zeller's death, at a meeting of the Philadelphia County Medical Society, the writer stated the case, giving facts and dates; but the impression on the majority of physicians present was very slight, and one noted physician of Philadelphia ridiculed the idea of communicability and dismissed the subject with the common story of it being simply a coincidence. Three years afterwards, this same physician informed the writer that he was convinced from other cases that tuberculosis was due to a germ. Since then, of course, the germ has been isolated and we are now in a fair way to stamp out the ravages of the "great white plague." (Signed) JOSEPH P. REMINGTON.

Dr. S. S. Cohen: It is partially true and partially false; as a rule recovery from tuberculosis does not establish immunity against infection. On the other hand, the life which prevents tuberculosis and brings about recovery from tuberculosis must be continued to prevent relapse. [Answering Question No. 3.]

SOUTH DAKOTA.—Dr. D. L. Rundlett: In a general way, yes, as few of us have not had a mild infection at some time but our natural immunity was such that the condition could not progress. In other words, we cured the disease ourselves, as Mr. Adams states. These facts are borne out in that we seldom see tuberculosis in those advanced in years. Of course, there is a possibility that people who did not understand this fully might be made careless of the danger.

TENNESSEE.—Dr. Ambrose McCoy: No. Not with our present knowledge.

UTAH.—Dr. T. B. Beatty: Have not seen article.

WISCONSIN.—Dr. C. A. Harper: I am not in accord with the statement of Mr. Adams in the Ladies' Home Journal for March. I do not believe that all young adults have had tuberculosis in mild or any other form; that there has been some infection in many of the apparently well young adults, I do not deny. Hence his first hypothesis in my judgment is absolutely incorrect. Of course, those adults who are now apparently well and have had tuberculosis in a mild form in some stages of their existence are self-cured. In the process of curing one's self that individual is not sufficiently fortified against catching the disease

from any other person. Catching tuberculosis is frequently a result of more or less repeated exposures to the infectious agent. This is abundantly exemplified in active observation that those intimately associated with a tubercular patient who is somewhat careless very frequently contract the disease, while those who are exposed to the same person only occasionally and at intervals under the same conditions never contract the disease. Everyone immunizing himself by having a mild type of tuberculosis is self-cured. Undoubtedly immunizing could be very thoroughly established by the inoculation of tuberculin over certain periods of time.

Furthermore, the hypothesis of Mr. Adams does not hold true in any of the other communicable diseases; pneumonia is prone to repeat itself; diphtheria likewise; scarlet fever may and occasionally smallpox; measles frequently and typhoid occasionally. There is nothing in the immunizing process of tuberculosis that is observed in other communicable diseases. One attack of these diseases does not immunize entirely.

Furthermore, there are homes where there are large families one member of which is afflicted with tuberculosis, all of the other members more or less exposed and undoubtedly infected for many weeks and months. Then a period of years will lapse and members of this family through marriage or change of residence would become exposed again to a tubercular person and as a result of exposure a second time would become thoroughly infected and seriously ill from the disease. It is conclusive in my mind that the danger of active tuberculosis is much greater at any time of life in those who are exposed to the infection from without than by a recurrence of latent infection. To me Mr. Adams's hypothesis is especially unsound and a dangerous principle to establish in the crusade against tuberculosis.

In a dairy herd in which I am interested over thirty animals have been tested repeatedly and found free from tuberculosis in every respect over a series of years. An additional animal was purchased with a certificate and tagged indicating freedom from tuberculosis and put with this herd. Facts were later discovered showing that this animal had been tested, given a free bill, when the test showed tuberculosis. Immediately the whole herd with which this infected animal had been placed was re-tested and seven animals reacted. This to me emphasizes the danger of an infected environment beyond all reasonable doubt.

WYOMING.—Dr. H. T. Harris: Not altogether.

[Summary for Number 3: Favorable to Mr. Adams's views, 5; partly favorable, 3; unfavorable, 12; doubtful, 5. Doctor Carr's parenthetical observation seems to the point.]

4. *Even if This New Theory of Tuberculosis Were Generally Accepted, Would It Not Point to the Necessity of Fumigation After Pulmonary Phthisis to Protect Children?*

ARIZONA.—Dr. R. N. Looney: We should always fumigate after pulmonary phthisis.

ARKANSAS.—Dr. C. W. Garrison: Yes.

DISTRICT OF COLUMBIA.—Dr. W. C. Woodward: The acceptance of Mr. Adams's dicta with respect to the communicability of tuberculosis does not lead necessarily to the abandoning of *disinfection.* Whether there shall or shall not be *fumigation* depends upon circumstances. (See answer to question 1.)

FLORIDA.—Dr. J. Y. Porter: Thorough fumigation would, I believe, be impracticable in nine-tenths of the cases, and would be practically, if not altogether, useless in all.

IDAHO.—Dr. W. R. Hamilton: I should feel so.

ILLINOIS CENTRAL R. R.—Dr. A. E. Campbell: I do most emphatically. Tuberculosis will never be reduced until the disinfection of all rentable houses occupied by this class be made compulsory by Municipal Health Boards.

INDIANA.—Dr. J. N. Hurty: If the "new theory" of tuberculosis were generally accepted, I would nevertheless favor extreme cleanliness, which means sanitary care of the sputum, etc., and would not object to disinfection if for no other reason than its psychological effect. Formaldehyde disinfection is not efficient against tuberculosis infection. The acidfast bacteria are not killed by gaseous formaldehyde.

KANSAS.—Dr. O. D. Walker: Fumigation will do no harm and may do much good; hence fumigate.

MAINE.—Dr. A. G. Young: Too many histories of tuberculosis in families, hitherto immune, after they have moved into tuberculosis houses.

MARYLAND.—Dr. J. S. Fulton: The view expressed by Mr. Adams is in no respect inconsistent with the practice of *disinfection* of tubercular sputum of contaminated premises of the tuberculous.

MINNESOTA.—Dr. H. M. Bracken: No.

MISSOURI.—Dr. G. B. Schultz: Yes.

NEBRASKA.—Dr. E. A. Carr: Yes, *to be sure.*

NEVADA.—Dr. M. F. Boyd: Terminal fumigation at the end of pulmonary tuberculosis for the protection of any person, and in the absence of more suitable and necessary prophylactic measures can have little justification.

NEW YORK.—Dr. F. M. Meader: No; because formaldehyde gas does not kill tubercle bacilli.

Dr. E. H. Porter: Possibly.

Dr. J. J. O'Connell: I am not very clear in my mind as to what the new theory of tuberculosis is, but it does not seem to me that the theories of Mr. Adams with regard to it have any real relationship to the question of fumigation.

Dr. M. C. Schroeder: Homes in which pulmonary tuberculosis occurs, especially where the lesions are breaking down, should be subject to routine weekly or monthly disinfection which should include the washing of walls, bedsteads, mattresses, blankets and the steam sterilization of bed and personal linen.

NEW MEXICO.—Dr. L. G. Rice: I believe in the theory, tuberculosis practically always contracted in infancy, all right, but this does not change my opinion on fumigation after tuberculosis.

NORTH CAROLINA.—Dr. J. H. Way: Fumigation after tuberculosis is, in my judgment, of little real value, though still advised. It does little good, and it may do harm in getting the attention of people away from real danger.

OHIO.—Dr. E. F. McCampbell: Yes, but it is most important to see that children are removed from an environment in which tuberculosis prevails.

ONTARIO (Canada).—Dr. J. W. S. McCullough: Fumigation advisable in tuberculosis quarters.

OREGON.—Dr. C. S. White: I believe renovation, scrubbing, boiling bedding, varnishing woodwork, etc., is better than fumigation.

PENNSYLVANIA.—[The writer has seen nothing to indicate that an exception is made, in the case of tuberculosis, to the general rule to fumigate with formaldehyde after communicable diseases.]

Dr. S. S. Cohen: Yes and no. The germ of tuberculosis does not remain long suspended in the air. Proper cleansing of walls and floor are necessary; also

sunlight is necessary. Fumigation is of much less importance in this connection than after the exanthemata and diphtheria.

SOUTH DAKOTA.—Dr. D. L. Rundlett: Certainly yes. It's a well known fact that a tubercular patient is a safe one only as long as he protects his mouth by a cloth on coughing or sneezing, and expectorates into a receptacle which contains an antiseptic. The sputum [in street or on floor] is dangerous only as it dries out and becomes ground up in the dust on the floor of rooms or on streets, and is breathed in, or taken in on food.

TENNESSEE.—Dr. Ambrose McCoy: Yes.

UTAH.—Dr. T. B. Beatty: Believe in fumigation after pulmonary tuberculosis.

WISCONSIN.—Dr. C. A. Harper: Whatever the theory, the fumigation and cleaning of the home where there was a case of pulmonary tuberculosis should be invariably practised.

WYOMING.—Dr. H. T. Harris: Yes, by all means.

[As nearly as replies to number four can be classified, 17 may be called affirmative, 5 negative and 8 doubtful.]

5. *Have You, in Your Experience, Thoroughly Satisfied Yourself as to Whether or Not Communicable Diseases are Commonly Conveyed by Objects Handled by the Patient? In Other Words, What Rôle Do Fomites Play in Carrying Infection?*

ARIZONA.—Dr. R. N. Looney: Fomites play an important rôle in the spread of disease.

ARKANSAS.—Dr. C. W. Garrison: I believe fomites do not play as important a rôle in the transmission of disease as formerly supposed, except in drinking and eating utensils by direct contact.

DISTRICT OF COLUMBIA.—Dr. Wm. C. Woodward: Exact channels of infection have not been satisfactorily worked out. Fomites, using the word as ordinarily understood, to mean woollen garments, etc., probably play a small part, if any, in the transmission of communicable diseases. If the word fomites can be used to cover such articles as cups, spoons, etc., then the part played by fomites is probably considerably greater.

FLORIDA.—Dr. J. Y. Porter: In my opinion, fomites play very little, if any, part in the transmission of contagious or infectious diseases. I believe direct contact with the patient or his excretions to be the only factor worthy of serious consideration in any epidemic or contagious disease.

IDAHO.—Dr. W. R. Hamilton: My belief is, that communicable diseases are contracted in this manner.

ILLINOIS.—Dr. C. St. Clair Drake: In my opinion, contact with patient or objects handled by patient—sick or well carrier—is the only way disease is spread.

ILLINOIS CENTRAL R. R.—Dr. A. E. Campbell: Yes, there are times when it looks that way, but we must state how often this is found and how often disease is traced to such a source. I would not favor a sweeping deduction.

INDIANA.—Dr. J. N. Hurty: I am inclined to believe fomites play very little part in carrying infection.

KANSAS.—Dr. O. D. Walker: A very common way of spreading contagious diseases.

MAINE.—Dr. A. G. Young: A secondary rôle, but one not to be neglected.

MARYLAND.—Dr. J. S. Fulton: Inanimate materials are frequently instrumental in the conveyance of infectious diseases. With respect to some diseases, inanimate

conveyors are more potent, and with respect to other diseases less potent, than animate carriers.

MINNESOTA.—Dr. H. M. Bracken: Not air borne.

MISSOURI.—Dr. G. B. Schultz: They frequently convey the infectious agent.

NEBRASKA.—Dr. E. A. Carr: School books, pencils, drinking cups, etc., are known to be carriers of disease; so I say fomites are dangerous.

NEVADA.—Dr. M. F. Boyd: Fomites, as the term is usually used, play a very insignificant rôle, if indeed any, in the transmission of the commoner infectious diseases. Objects directly passing from mouth to mouth, etc., are of considerable importance in disease transmission, but are not included in the generally accepted meaning of the term fomites.

NEW YORK.—Dr. F. M. Meader: A very minor part.

Dr. E. H. Porter: It would seem to be an important one.

Dr. J. J. O'Connell: Certain of the communicable diseases are undoubtedly conveyed on objects which have been handled by a patient. Our knowledge of the etiological factors is not adequate to warrant us in defining the rôle played by fomites. In pneumonia plague there is no doubt that the air sustains for a period minute globules which contain *B. pestis.* In clothing soiled with fecal matter certain organisms will survive for varying periods of time. In our laboratory we have recently conducted several experiments as to the viability of cholera germs in sea water and we find that in the greatly contaminated water of our harbor the vibrios will live for several weeks. As we have not identified as yet the pathogenic organisms of scarlet fever and measles and some of the other infections, it is not scientific to contend that these organisms will not live in clothing and in material other than animal tissue. There have been cases in my own experience as well as in the experience of most physicians with whom I have discussed this subject, where direct contact was most improbable if not impossible, and the infection was explicable only in the light of the fomite theory. I have not read in the published works of those who condemn this theory any explanation of infection in such cases which did not seem to me to be based upon the merest speculation. I believe there is great danger in the acceptance as authoritative of theories with regard to fumigation and isolation of cases of infectious diseases based upon conjectures which fly in the face of common experience.

Dr. M. C. Schroeder: Yes.

NEW MEXICO.—Dr. L. G. Rice: They are very often carried by objects but not always.

NORTH CAROLINA.—Dr. J. Howell Way: I do not, and do not think many people nowadays believe much in fomital infection. *Persons,* not things, are the manifest sources of disease.

OHIO.—Dr. E. F. McCampbell: I believe that fomites do play a part in spreading communicable disease, but that the infection does not persist long as fomites and that direct contact is a much more important means of transmission.

ONTARIO (Canada).—Dr. J. W. S. McCullough: Immediate handling of toys, etc., especially if placed in the mouth as children do, will in my opinion transmit disease.

OREGON.—Dr. C. S. White: With the exception of smallpox, perhaps comparatively little.

PENNSYLVANIA.—[Dr. Dixon does not answer this question specifically, but from the thorough method of fumigation he advises, the danger of infection from articles in a room which have been handled by the patient is recognized.]

Dr. S. S. Cohen: Yes, fomites play a very large rôle. I have no statistical studies and can only judge by observation. That fomites do not carry yellow fever is evident; they do convey scarlet fever, typhoid fever, cholera, etc.

SOUTH DAKOTA.—Dr. D. L. Rundlett: Yes. I have seen it conveyed in two or three cases of diphtheria by the means of toys.

TENNESSEE.—Dr. Ambrose McCoy: Doubtful as to exact rôle that fomites play in the transmission of disease.

UTAH.—Dr. F. B. Beatty: No, but believe that the latter is secondary in importance.

WISCONSIN.—Dr. C. A. Harper: My observance leads me to believe that communicable diseases are very commonly conveyed by objects handled by patients, or, in other words, fomites. Many striking examples of this have come in my experience.

WYOMING.—Dr. H. T. Harris: Fomites play a very important part in the spread of communicable diseases.

[Summary, Number 5: 15 regard fomites as of considerable importance in conveying infection; 7 consider them of secondary importance but not to be neglected, and 8 regard them as of comparatively little or no consequence.]

6. *How Is It That Some Sanitarians, Who Advise Burning Books Handled by a Person Having a Contagious Disease, Regard the Fomite Theory, as Applied to Things Generally, so Lightly That They Do Not Fumigate the Room and Its Contents?*

ARIZONA.—Dr. R. N. Looney: Don't know.

ARKANSAS.—Dr. C. W. Garrison: Simply an inconsistency.

DISTRICT OF COLUMBIA.—Dr. Wm. C. Woodward: This is because of the radical difference between the relation of the patient to a book and the relation of a patient to a room.

FLORIDA.—Dr. J. Y. Porter: This is merely one of the very frequent glaring inconsistencies indulged in by some of our health authorities. This attitude is very often, I think, the result of a spirit of compromise on the part of the health officer with the laity, who persist in clinging to the ancient and time-worn superstitions and theories regarding disease transmission.

IDAHO.—Dr. W. R. Hamilton: I do not know.

ILLINOIS.—Dr. C. St. Clair Drake: Fumigation does not sterilize.

ILLINOIS CENTRAL R. R.—Dr. Campbell: Because the profession is divided on this subject.

INDIANA.—Dr. J. N. Hurty: I do not know how it is that some sanitarians would advise burning books handled by a person having contagious disease but do not fumigate the room and its contents. Such sanitarians must, of course, answer the question.

KANSAS.—Dr. O. D. Walker: I don't know.

MAINE.—Dr. A. G. Young: It is beyond me.

MARYLAND.—Dr. J. S. Fulton: I do not have to explain anybody's inconsistencies, not even my own. I am not even prepared to say that the inconsistency assumed in this question is a real inconsistency.

MINNESOTA.—Dr. H. M. Bracken: The idea of destroying books is on the basis that one who has had an infectious disease and has transferred the infectious material from the mouth or other parts of the body to the hands, has left the infectious material on the books.

MISSOURI.—Dr. G. B. Schultz: Ignorance.

NEBRASKA.—Dr. E. A. Carr: Do not understand how they apologize to themselves.

NEVADA.—Dr. M. F. Boyd: I am not familiar with such standing taken by any sanitarian.

NEW YORK.—Dr. F. M. Meader: I do not think it necessary to burn books. If exposed recently to infectious material they may be fumigated.

Dr. E. H. Porter: Consistency is a jewel.

Dr. J. J. O'Connell: I am sure that I cannot answer your question because there seems to be no consistency in burning books handled by infectious disease patients and failing to disinfect the rooms occupied by these patients and the contents of such rooms.

Dr. M. C. Schroeder: It is human to err.

NEW MEXICO.—Dr. L. G. Rice: They simply want to be a little different from others; but are not practical.

NORTH CAROLINA.—Dr. J. Howell Way: I don't know. Should you find a real, sensible, consistent reason, let me know why.

OHIO.—Dr. E. F. McCampbell: I cannot explain the mental processes of the sanitarians mentioned.

ONTARIO (Canada).—Dr. J. W. S. McCullough: Fomites will not carry disease after any lengthened period.

OREGON.—Dr. C. S. White: I do not know.

PENNSYLVANIA.—[Dr. Dixon's explanation of the process used in Pennsylvania for fumigating the room and everything in it, appears on another page.]

Dr. S. S. Cohen: This is a question for psychiatrists.

SOUTH DAKOTA.—Dr. D. L. Rundlett: That is beyond the working of my brain to explain.

TENNESSEE.—Dr. Ambrose McCoy: That I cannot answer.

UTAH.—Dr. T. B. Beatty: Consider such practice inconsistent.

WISCONSIN.—Dr. C. A. Harper: In answer to your next question, beg to state that I am unable to reconcile myself to the proposition advanced that books should be burned after they have been exposed to contagious disease while other fomites are left unfumigated or not destroyed. The element of light is an important factor in the destruction of infective agencies and of course it is difficult to have the light invade the interior of a book to any considerable extent, while fomites in general are more exposed to light; but there is not sufficient difference in the two propositions to warrant the destruction of one and neglect of the other.

WYOMING.—Dr. H. T. Harris: Such an attitude as above outlined seems to me inconsistent.

[Nearly all seem to agree that the position referred to is inconsistent. Dr. Harper's very clearly stated views will doubtless be generally accepted.]

7. *Is Not the Viability of Pathogenic Bacteria So Influenced by Deficiency of Light and Fresh Air, and So Affected by Atmospheric Conditions in General, as to Make it Unwise to Rely Upon Disease Germs Shortly Succumbing to Conditions Practically Unattainable Without Fumigation?*

ARIZONA.—Dr. R. N. Looney: It is not safe to rely entirely on fresh air and sunlight.

ARKANSAS.—Dr. C. W. Garrison: Yes. We should be on the safe side and fumigate. In addition to fumigating, however, I hold that the free and intelligent

use of soap and water is more important and efficacious in most instances, especially in those diseases classified as infectious.

DISTRICT OF COLUMBIA.—Dr. Wm. C. Woodward: If the destruction of disease germs is practically unattainable without fumigation, then by all means fumigate; but the impracticability of destroying disease germs without fumigation must not be taken for granted. Fresh air, sunlight, mechanical cleaning, and the use of germicides in solution can commonly be relied upon.

FLORIDA.—Dr. Porter: I do not so consider it. All of our knowledge of pathogenic bacteria shows clearly that they can live only a short time outside the body, except upon suitable media and under *most favorable* conditions; which conditions certainly do not exist, as a general rule, outside the bacteriological laboratory.

IDAHO.—Dr. W. R. Hamilton: Yes.

ILLINOIS.—Dr. C. St. Clair Drake: Yes.

ILLINOIS CENTRAL R. R.—Dr. A. E. Campbell: This also is unsettled ground. We will fumigate all our cars as a precautionary measure for some time.

INDIANA.—Dr. J. N. Hurty: I cannot answer this question satisfactorily to myself.

KANSAS.—Dr. O. D. Walker: Yes.

MARYLAND.—Dr. J. S. Fulton: Practical disinfection must take all of these considerations into account, and as far as possible must be governed by them. The general assumption that the processes of nature would be greatly expedited by liberating quantities of formaldehyde gas may have some pleasant spiritual effect, but I am convinced that four-fifths of the time and material expended in my State on the liberation of formaldehyde gas is of no demonstrable value.

MINNESOTA.—Dr. H. M. Bracken: Yes, and under ordinary methods of disinfection, they will not be killed. They can be disposed of by a thorough housecleaning and a room into which it is not possible to admit the sunlight and air should not be considered as a place for future habitation under any conditions whatever. In fact, the existence of such rooms is a disgrace to any community.

MISSOURI.—Dr. G. B. Schultz: Yes.

NEBRASKA.—Dr. E. A. Carr: Yes.

NEVADA.—Dr. M. F. Boyd: Your last question is too broad to permit of a brief concise reply. The organisms causing the commoner infectious diseases are all strict parasites, needing the conditions of warmth, moisture and darkness offered them by the body cavities for their life and multiplication, so that they readily succumb outside the body. The inability to survive in an extra-corporeal existence, due to factors of chilling, light and desiccation, achieves the same results, as contemplated by fumigation, and I believe probably as effectively.

NEW YORK.—Dr. F. M. Meader: Experience teaches that terminal fumigation does not limit the spread of communicable diseases as enumerated by our sanitary code.

Dr. E. H. Porter: It might be; but the value of fumigation unless supervised by an expert is often doubtful.

Dr. J. J. O'Connell: I do not think it wise to rely for safety solely upon the influence of light and fresh air on the viability of pathogenic bacteria.

Dr. M. S. Schroeder: Yes.

NEW MEXICO.—Dr. L. G. Rice: Very unwise; use all precautions, but at the same time fumigate the best we know how.

NORTH CAROLINA.—Dr. J. Howell Way: Possibly so.

OHIO.—Dr. E. F. McCampbell: Pathogenic bacteria differ in their resistance

to such agents as light and drying, so it is impossible to make a general statement in answer to this question. As I have said, in answer to Question No. 1, the Ohio State Department of Health recommends terminal disinfection after certain diseases.

ONTARIO (Canada).—Dr. J. W. S. McCullough: I think it wise in light of present knowledge to fumigate.

OREGON.—Dr. C. S. White: Yes. This is especially true of the pus infections and smallpox.

PENNSYLVANIA.—Dr. S. G. Dixon: [As stated before, Dr. Dixon favors fumigation by the sodium dichromate, formalin and sulphuric acid method, suggested by Dr. George D. Rosengarten and developed by the Pennsylvania Board of Health.]

Dr. S. S. Cohen: Certainly.

SOUTH DAKOTA.—Dr. D. L. Rundlett: Yes. I feel very strongly that the process of fumigation should be carried out in a thorough manner, because while sunlight and fresh air will kill certain disease germs in a few moments, we have no way of knowing positively that these means have been able to penetrate certain nooks and corners, where a gas will penetrate.

TENNESSEE.—Dr. Ambrose McCoy: Cannot say.

UTAH.—Dr. T. B. Beatty: Yes.

WISCONSIN.—Dr. C. A. Harper: The viability of pathogenic bacteria differs very much. The degree of light and moisture also are important factors in the greater lessening of the viability of pathogenic bacteria. The degree of light and moisture differs very materially and cannot be relied upon as a sufficiently destructive factor to eliminate the necessity of fumigation. Such a procedure in my judgment is not verified in actual experience; on the other hand, the opposite condition is frequently observed.

I believe aerial disinfection an important factor. This also is important on the exposed surface with which the air comes in contact, and should the process be abolished the pocket-books of the medical profession would be greatly fattened.

WYOMING.—Dr. H. T. Harris: Most certainly.

[Twenty favor fumigation in addition to fresh air and sunshine; three emphasize value of germicidal solutions; three regard fumigation as of practically no value, and four are doubtful.]

FRESH AIR AND SUNSHINE.

Doctor Bracken's (Minnesota) reference to "proper conditions" and "sunlight," in his replies to questions 1 and 7, in some way reminded me of an article by Professor Lewis Jerome Johnson of Harvard University (page 498 of the American Public Health Journal, June, 1914) on the relation of methods, of taxation to the public health, and I wrote to General Gorgas and Dr. S. S. Cohen for expressions of their views on this phase of our subject. Here is letter from General Gorgas:

WAR DEPARTMENT,
Office of the Surgeon General.

WASHINGTON, July 3, 1915.

Mr. Seward W. Williams,
5415 Hyde Park Boulevard,
Chicago, Illinois.

Dear Mr. Williams:

Yours of June the twenty-eighth is acknowledged. I was very thoroughly impressed in my sanitary work with the evil effects upon the general health of the community which our

present system of taxation causes. In both Cuba and Panama American occupation was at once followed by a large increase of wages. This was at once followed by very much better living conditions among the poorer classes, and, therefore, very much improved sanitary conditions. In considering these instances, I was impressed by the fact that low wages were due to there not being enough jobs to go around and that, therefore, the wage-earners were forced to bid against each other for these jobs. I can see that a tax on land values would tend to everywhere bring the large body of unused lands into use. This would furnish abundant jobs to the jobless and would prevent them from bidding against each other for employment, and, therefore, have a great tendency to raise wages. I feel confident that the most important sanitary measure that any community could adopt would be a taxation on land values.

Very truly yours,

(Signed) W. C. GORGAS,
Surgeon General U. S. Army.

Dr. S. Solis Cohen, Philadelphia, Pa., under date of July 19, 1915, replies as follows:

I have been very much interested in your letter and its enclosure.

With the comment which you quote from an executive officer of the Board of Health as follows:

> Pathogenic germs will not be killed under ordinary methods of disinfection. They can be disposed of by a thorough house-cleaning; and a room into which it is not possible to admit sunlight and fresh air should not be considered as a place for future habitation under any conditions whatever. In fact, the existence of such rooms is a disgrace to any community—

I must express considerable sympathy. While I advocate fumigation, I am not at all sure that it succeeds in killing all pathogenic germs. It is, however, much better than nothing. It does, judging from practical results, diminish considerably the danger of infection, probably by killing a certain proportion of the pathogenic bacteria and diminishing the virulence or viability of others. Thus, it is a precaution that we cannot afford to neglect, however imperfect it may be.

Nevertheless, we should not allow ourselves to be misled into an unwise dependence upon an acknowledgedly imperfect measure. Fresh air and sunlight are necessities of life; and just in the proportion that they are beneficial to man they are harmful to his microscopic enemies. I have long been in the habit of quoting Graves of Dublin, who said, three-quarters of a century ago: "It is important to know how to make a man phthisical, as by pursuing an opposite line of conduct we will be able to prevent it." Graves had studied phthisis as it appeared in the Irish peasants and town laborers. He had found that it was the result of dirt and dampness and darkness and starvation; that those who were well fed and well housed, to whom water and air and sunlight were easily accessible, did not succumb.

This has been the invariable experience of all those who have studied the problem of tuberculosis. The tubercle bacillus is harmless against normal human beings under normal conditions. The organism contains within itself powers of defense and resistance more than sufficient to overcome infection, and it is only when these powers have become enfeebled through privation, depression or excess, that tuberculosis can find lodgement within the body. Hence, it is, also, that while Ireland was the great field for tuberculosis in the time of Graves, on account of the poverty and the wretched housing conditions there prevailing, New York City has become in our day pre-eminently the field of tuberculosis, on account of the poverty and the wretched housing conditions there prevailing.

More than thirty years ago I pointed out that tuberculosis was no longer a medical problem, but pre-eminently one for the sociologist, and especially one for the statesman. Originating in the hovel, it may, under certain conditions, spread to the palace, visiting, as I then said, "the miseries of Lazarus upon the children of Dives." Though it prevails chiefly among the poor, the rich are not immune, and while the resistance of the poor breaks down because of their lack of food, their lack of rest, their lack of fresh air and of sunshine, of

opportunities for personal cleanliness and for innocent enjoyment, it may break down among the very rich from the opposite causes—the exhaustion by the victims themselves or by their parents, of their natural protection—through lives of extravagance and idleness, or physical and spiritual dissipation.

Hence, considering both extremes, the problem is one of economics—on the one hand to prevent the accumulation of unearned fortunes as now permitted by unwise laws, and on the other hand to secure a proper distribution of the wealth produced by conjoined labor and capital among the masses of producers so that they shall be enabled to provide for their wants without excessive hours of labor, and shall be enabled both to work and to live under sanitary conditions both as regards the body and as regards the mind. The fear of poverty —the constant anxiety lest one "get out of work" with all that this implies—is a fertile cause of mental and physical depression reducing the resistance.

It is easier, however, to understand concrete examples than abstractions, and one concrete example may stand as a type of the whole series of conditions mentioned. The absence of air and sunlight from dwellings is owing to the necessity for crowding a large number of habitations into a small area; and this is purely an artificial, man-made, indeed, law-made, need. In other words, it is unnatural. In Great Britain and Ireland we have the miserable cottage of the laborer flanking the enormous estates, lawns, forests, grand preserves, and deer parks of the gentry. In New York City we have the tenements or the congested districts within a short distance of open country affording ample space for modest dwellings with healthful surroundings. Nay, on Manhattan Island itself there is space, if properly utilized. Both in the old country and in the new, our land laws are at fault. The remedy is obvious. It applies alike to village and town, to commercial, industrial, mining and agricultural settlements. It would alter factory conditions, mining conditions, housing conditions, for the rich and the poor alike.

It is simply this: At present we set a premium upon keeping land vacant, and fine those who improve and make use of their land. The vacant lot in the heart of the growing city is taxed lightly; when it is built upon, not only are the taxes upon the land itself increased, but we add to them the tax upon the building that has been erected, and whose erection has afforded employment to architect and to many classes of artisans. Enormous profits are pocketed with the unearned increment accruing to land held idle, while the farmer and the builder receive but a modest recompense for their labor and risk. The owner of idle land along a railroad demands a large sum from those who propose erecting a factory upon it which will employ many workers, increase the business of the railroad and help to build up the community wherein it is established. The factory owners, after expending large sums for the land, must also invest other large sums in buildings and machinery, and then pay taxes on the increased assessment of the land and upon the value of their plant. Since they risk their whole capital in the business, they are entitled to a fair profit, and when this has been deducted from what is left after the payment of interest upon the cost of ground and plant, added to taxes, the amount left for distribution among the workers is relatively small.

Change this, tax vacant land equally with adjoining land put to wise use, and remove taxes from the improvements made by the farmer, builder, manufacturer, miner, etc., and you will revolutionize not only industry, but health. Rents will fall, the profits of the farmer, the manufacturer and the merchant, the wages of the workman, will alike increase. In other words, labor, whether mental or physical, will receive its due reward; and legal ground-blackmail—which is what the holding of land out of use amounts to—will cease.

In particular, to come back to our text, over-crowding in unsanitary dwellings, will disappear; and the increased bodily resistance which will result from working under proper conditions and with wages that will afford to everyone good food and decent living, with his share of rest and recreation, will so simplify the problem of contagious diseases that perhaps fumigation may be dispensed with, and dependence placed upon the cleanliness and due provision of air and sunlight which will then be possible.

(Signed) SOLOMON SOLIS COHEN.

(To be continued.)

PHARMACOPŒIAL BOTANIC DRUGS OF THE TWENTIETH CENTURY.

BY E. N. GATHERCOAL.

The original purpose of preparing a list of botanical drugs that are included in the national pharmacopœias of the world was simply to obtain a check-list for use in the pharmacognosy museum. The list as here presented includes all of the drugs directly derived from plants described in any of the national pharmacopœias * that have been revised since 1900.

There are named in the list 550 pharmacopœial drugs. When it is considered that the pharmacopœias of nineteen countries have been consulted and that these represent the whole modern world, the number of drugs recognized in all, or nearly all, of these pharmacopœias is surprisingly large. Thus 37 of the total of 550 drugs are recognized in each of the pharmacopœias, 19 are included in all but one, 10 are included in all but two and 12 in all but three, while 136 are recognized in but one pharmacopœia and 94 in but two of them. These latter numbers would be smaller but that the new British Pharmacopœia and the Netherlands Pharmacopœia recognize a number of odd Indian and East Indian drugs used in those portions of the world. The drugs that are recognized in all the pharmacopœias are the following:

Anise, Belladonna Leaves, Benzoin, Bitter Orange Peel, Camphor, Cascara Bark, Castor Oil, Cinchona and Red Cinchona, Cloves, Copaiba, Croton Oil, Cubebs, Ergot, Fennel, Foxglove, Gentian, Goldenseal, Gum Arabic, Henbane, Ipecac, Jalap, Male Fern, Nux Vomica, Oil of Anise and Anethol, Oil of Cloves and Eugenol, Oil of Peppermint, Opium, Peru Balsam, Rhubarb, Rosin, Senega, Senna, Squill, Storax, Strophanthus, Sweet Almond, Valerian Root. Those recognized in all but one of the pharmacopœias are Arnica Flowers, Asafœtida, Black Mustard, Cacao Butter, Columbo, Ginger, Linseed, Lycopodium, Myrrh, Oil of Lavender, Oil of Lemon, Olive Oil, Peppermint, Rhatany, Sandalwood Oil, Sarsaparilla, Sweet Almond Oil, Tolu Balsam and Uva Ursi. Those recognized in all but two of the pharmacopœias are Absorbent Cotton, Aloes, Colchicum Seed, Linseed Oil, Lobelia, Manna, Nutmeg, Oil of Rosemary, Oil of Turpentine, and Volatile Oil of Mustard. Those recognized in all but three of the pharmacopœias are Bitter Almond, German Chamomile, Gum Ammoniac, Juniper Berries, Liquid Tar, Marshmallow Root, Pomegranate Bark, Spanish Saffron, Tragacanth, Turpentine, Wormwood and Levant Wormseed. It is of interest to note that six of the above mentioned drugs are not to be recognized in the new United States Pharmacopœia, namely, Bitter Almond, Gum Ammoniac, Juniper Berries, Spanish Saffron, Turpentine and Wormwood.

Of the 230 drugs recognized in but one or two pharmacopœias, 29 are found only in the United States Pharmacopœia, the following being included in both the U. S. P. VIII and IX: Bloodroot, Cottonseed Oil, Malt, Oil of Pimento, Oil of Chenopodium, Pinkroot, Prickly Ash Bark, Sabal, Saigon Cinnamon, Slippery Elm Bark, Stillingia, Yerba Santa. Those found only in the U. S. P. VIII are Blackberry Bark, Boneset, Crampbark, Geranium Root, Cypripedium, Figs, Leptandra, Calendula, Oil of Fleabane, Oil of Pennyroyal, Oil of Wintergreen (as

* From the Mexican Pharmacopœia, which resembles a dispensatory rather than a pharmacopœia, and which contains more than 700 articles of botanic origin, many of them native to Mexico, only those drugs that are also recognized in some other pharmacopœia are here included.

such), Berberis Aquifolium, Pareira, Pipsissewa, Sassafras Pith, Scullcap, Sumach Berries.

The pharmacopœias consulted, with their dates of last revision, are as follows:

Pharmacopœa Austriaca, 8th ed.	1906
Pharmacopœa Belgica, 4th ed.	1906
British Pharmacopœia, 5th ed.	1914
Pharmacopœa Croatico-Slavonica, 2d ed.	1901
Pharmacopœa Danica, 7th ed.	1907
Pharmacopeé Francaise, 5th ed.	1908
Deutsches Arzneibuch, 5th ed.	1910
Pharmacopœa Hungarica, 3d ed.	1909
Formacopea ufficiale del Regno d' Italia, 2d ed.	1902
Pharmacopœia of Japan, English trans., 3d ed.	1907
Nueva Farmacopea Mexicana, 4th ed.	1904
Pharmacopœa Nederlandica, 4th ed.	1905
Pharmacopœa Norvegica, 4th ed.	1913
Russian Pharmacopœia, 3d ed.	1910
Pharmacopœa Serbica, 2d ed.	1908
Farmacopea oficial Espanola, 7th ed.	1905
Pharmacopœa Suecica, 9th ed.	1908
Pharmacopœa Helvetica, 4th ed.	1907
Pharmacopœia of the United States, 8th ed.	1905
† Pharmacopœia of the United States, 9th ed.	1916

† The list of U. S. P. IX drugs was taken from the Abstract of Proposed Changes of the United States Pharmacopœia, ninth revision, vol. iii of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, and was revised July 1 by Prof. J. P. Remington, Chairman of the Revision Committee. As the work of revision of the pharmacopœia is nearly completed, further changes will probably be very few.

The national pharmacopœias that have not been revised since 1900 and therefore not included in this list are as follows:

Farmacopea Argentina,	1908
Pharmacopœa Fennica, 4th ed.	1888
Pharmacopœa Graeca, 2d ed.	—
Pharmacopea Portugueza, 1st ed.	1876
Farmacopea Romana, 3d ed.	1893
Farmacopea Venezolana,	1900
Farmacopea Chilena,	1886

This list of drugs has been compiled upon the Latin plant names, alphabetically arranged. It was quite out of the question to use the pharmacopœial titles of the drugs, as these varied widely in the different pharmacopœias. Even with the arrangement under plant names several difficulties were encountered. Different names for the same plant are sometimes used in the various pharmacopœias, or the botanical source of a drug may still be in question, or the drug is derived from a number of different species or even genera. However, as this list is not designed to prevent controversies over botanical nomenclature, these difficulties are overcome by arbitrarily using that plant name in the majority.

In all cases the botanical names used in any pharmacopœia but not placed in the alphabetical list have been indicated in footnotes and indexed at the end of the number of the drug.

Key will be added for abbreviations used, at conclusion of article.

Latin plant names	English names	Austrian	Belgian	British	Croatian	Danish	French	German	Hungarian	Italian	Japanese	Mexican	Netherlands	Norwegian	Russian	Servian	Spanish	Swedish	Swiss	U. S. P. VIII.	U. S. P. IX.
1. Abies balsamea, olr.	Canada Turpentine			X																X	
2. Abies excelsa, pfd. olr.	Burgundy Pitch						X			X							X				
3. Abies pectinata, olr.	Strassburg Turpentine																X				
4. Abies sibirica, vo. lv.	Oil of Pine Needles			X																	
5. Abrus precatorius, s.	Jequirity Seed																X				
6. Abrus precatorius, lv.	Jequirity Leaves												X								
7. Acacia arabica, bk.	Acacia Bark			X																	
8. Acacia Catechu, ext. wd.	Catechu	X	X	X			X	X		X	X	X			X		X		X		
9. Acacia species, g. exud.	Gum Arabic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
A. Senegal.		X		X		X	X	X	X		X		X	X	X		X		X	X	X
A. Verek										X		X			X		X				
A. Arabica							X										X				
10. Achillea Millefolium, fl. hb.	Yarrow	X													X				X		
11. Aconitum Napellus, lv.	Aconite Leaves						X					X					X				
12. Aconitum Napellus, rt.	Aconite Root		X	X			X	X		X	X	X	X		X		X		X	X	X
13. Acorus Calamus, rh.	Calamus	X			X			X	X	X		X	X	X	X	X	X	X	X	X	
14. Acorus Calamus, v.o.	Oil of Calamus							X													
15. Adiantum, Herba capillorum veneris, hb.	Maidenhair		X									X					X		X		
16. Adonis vernalis, fl. hb.	False Hellebore	X								X			X		X		X		X		
17. Ægle Marmelos, fr. ft.	Bael Fruit			X																	
18. Agathis australis, res.	Dammar						X	X			X				X	X	X				
19. Agropyron repens, rh.	Triticum	X	X	X			X		X			X					X		X	X	X
20. Aloe species, i.j.	Aloes	X	X	X		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
A. Barbadensis												X									
A. spicata	Barbadoes Aloes						X			X							X				
A. Chinensis				X																X	
A. Africana							X							X			X	X			
A. linguæformis	Cape Aloes						X										X				
A. perfolata							X										X				
A. ferox						X	X			X		X		X			X	X	X		X
A. Socotrina	Socotrine Aloes									X		X									
A. Perryi				X																X	X
A. vera	Curacao Aloes									X							X			X	X
21. Aloysia citriodora, lv.												X					X				

22. Alpinia officinarum, rh.	Galangal					×	×	×						×	×		×	×	×						
23. Alsidium Helminthochortor, th.	Corsican Moss						×										×								
24. Alstonia constricta, bk				×																					
25. Althæa officinalis, lv.	Marshmallow Leaves	×	×		×			×	×	×			×			×			×						
26. Althæa officinalis, rt.	Marshmallow Root	×	×			×	×	×	×	×	×	×	×	×	×		×	×	×	×	×				
27. Althæa officinalis, fl.	Marshmallow Flowers		×				×																		
28. Alyxia stellata, bk.													×												
29. Anacardium occidentale, lv	Cashew Leaves											×	×												
30. Anacyclus Pyrethrum, rt.	Pellitory Root	×		×			×					×					×			×	×				
31. Anchusa Italica, fl																	×								
32. Andira Araroba	Chrysarobin	×	×	×		×	×	×		×	×	×	×	×	×			×	×	×	×				
33. Anogeissus latifolia, g. exud	Indian Gum			×																					
34. Anemone Pulsatilla, fl. hb.	Pulsatilla						×					×													
35. Angelica archangelica, lv.	Angelica Leaves						×																		
36. Angelica archangelica, rh. & rt.	Angelica Root	×			×		×	×	×			×			×				×						
37. Antennaria dioica, fl. tp.			×				×																		
38. Anthemis nobilis, fl. hd.	Roman Chamomile	×	×	×			×			×	×	×	×				×		×	×					
39. Anthemis nobilis, v.o	Oil of Roman Chamomile		×	×																					
40. Apium graveolens, rt.	Celery Root						×					×					×								
41. Apocynum cannabinum, rh. & rt.	Canadian Hemp											×								×	×				
42. Arachis hypogæa, f.o.	Peanut Oil			×				×												×					
43. Arctium Lappa, rt	Burdock Root	×																			×				
44. Arctostaphylos Uva-Ursi, lv	Uva Ursi	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×			
45. Areca Catechu, s.	Areca Nut							×												×					
46. Aristolochia Serpentaria, rh. & rt.	Virginia Serpentaria			×							×	×									×	×			
47. Arnica montana, fl. hd	Arnica Flowers	×	×	×	×	×	×	×		×	×	×	×	×	×	×	×	×	×	×	×	×			
48. Arnica montana, lv.	Arnica Leaves				×							×													
49. Arnica montana, rh. & rt.	Arnica Root	×			×					×		×					×	×							
50. Artemisia Absinthium, fl. hb	Wormwood	×	×		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×					
51. Artemisia cina, fl. hd.	Levant Wormseed	×	×		×	×	×	×	×	×	×		×	×	×	×	×	×	×	×	×				
52. Artemisia vulgaris, fl. hb	Mugwort Herb						×													×					
53. Arundo Donax, rh																		×							
54. Asarum Europæum, rh. & rt	Asarabacca																			×					
55. Asparagus officinalis, rh. & rt	Asparagus Root						×					×					×								
56. Aspidium Filix-mas, rh	Male Fern	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×			
57. Aspidosperma Quebracho-blanco, bk.	Quebracho	×										×						×	×		×		×		

2. Also see Pinus species, No. 386; French from Picea excelsa.
4. Also see Pinus species, No. 387.‡
7. British also from A. decurrens.
8. German and Japanese from A. suma only; Russian and Spanish also from A. suma.
15. French from A. pedatum.‡‡
16. Italian also from A. æstivalis, A. autumnalis and A. cupaniana.
18. German, Japanese and Servian from Shorea Wiesneri and other species.
19. Austrian, Belgian and Hungarian—Triticum repens; Spanish and Mexican from Cynodon Dactylon (Scotch or Bermuda grass).
24. British also from A. scholaris.
32. U. S. P. VIII and IX from Vouacapoua Araroba.
36. Austrian, German and Russian—Archangelica officinalis.
37. French—Gnaphalium dioicum.
43. Austrian—Lappa vulgaris.
44. Austrian—A. officinalis.
46. British, Mexican and U. S. P., VII and IX, also from A. reticulata (Texas Snakeroot).
51. Danish and U. S. P. VIII—A. pauciflora; Belgian and French—A. maritima.
56. Spanish—Polypodium Filix-mas; U. S. P. VIII and IX—Dryopteris Filix-mas

Latin plant names	English names	Austrian	Belgian	British	Croatian	Danish	French	German	Hungarian	Italian	Japanese	Mexican	Netherlands	Norwegian	Russian	Servian	Spanish	Swedish	Swiss	U. S. P. VIII	U. S. P. IX
58. Astragalus species, g. exud	Tragacanth		X	X		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
A. adscendens			X									X			X						
A. creticus										X					X		X				
A. gummifer				X			X					X			X		X			X	X
A. verus										X					X						
59. Atropa Belladonna, lv	Belladonna Leaves	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
60. Atropa Belladonna, rt	Belladonna Root	X		X								X					X		X	X	X
61. Barosma betulina, lv	Buchu			X							X	X								X	X
62. Berberis aquifolium, rh. & rt	Oregon Grape																			X	
63. Berberis aristata, st				X																	
64. Berberis vulgaris, ft	Barberry						X														
65. Betonica officinalis, hb							X					X									
66. Betula alba, emp. o. fm. wd	Oleum Rusci	X									X		X		X				X		
67. Betula lenta, vo. fm. bk	Oil of Sweet Birch			X																X	X
68. Bidens pilosa, lv													X								
69. Bixa Orellana, lv												X	X								
70. Blumea balsamifera, lv													X								
71. Borrago officinalis, fl							X					X					X				
72. Boswellia species, g. res	Olibanum	X			X	X	X					X	X	X			X				
B. Bkaw-Dajiana		X															X				
B. Carterii		X			X	X	X					X	X	X			X				
73. Brassica nigra, s	Black Mustard	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
74. Brassica nigra, v.o	Vol. Oil of Mustard	X	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X
75. Brassica Napus, f. o. fm. s	Rapeseed Oil					X								X				X			
76. Brucea Sumatrana, ft													X								
77. Butea frondosa, i. j. fm. st	Bengal Kino			X																	
78. Butea frondosa, s	Butea Seeds			X																	
79. Cæsalpinia Sappan, ht. wd	Sappan			X																	
80. Calamintha officinalis, fl. hb							X														
81. Calamus Draco, res. fm. ft	Dragon's Blood											X					X				
82. Calendula officinalis, lig. fl	Marigold																			X	
83. Callitris quadrivalvis, res	Sandarac	X				X	X				X						X	X			
84. Canarium commune, res	Elemi	X	X				X					X	X				X		X		
85. Cannabis sativa, fl. tp	Indian Hemp	X	X	X	X		X		X	X	X	X	X		X	X	X		X	X	X
86. Cannabis sativa, ft	Hemp Seed											X		X	X				X		
87. Capsicum annuum, ft	Spanish Pepper	X	X		X	X		X	X			X	X	X	X			X	X		
88. Capsicum fastigiatum, ft	African Pepper			X							X	X								X	X
89. Carum Carvi, ft	Caraway	X		X				X			X	X		X				X	X	X	X

| | | |

Latin plant names	English names	Austrian	Belgian	British	Croatian	Danish	French	German	Hungarian	Italian	Japanese	Mexican	Netherlands	Norwegian	Russian	Servian	Spanish	Swedish	Swiss	U. S. P. VIII	U. S. P. IX
120. Citrus Aurantium, v. o	Oil of Orange						X				X	X								X	X
121. Citrus vulgaris, ft. ri	Bitter Orange Peel	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
122. Citrus vulgaris, v. o. fm. ft	Oil of Orange	X	X		X						X	X	X				X				
123. Citrus vulgaris, unr. ft	Orange Berries							X			X			X	X			X			
124. Citrus vulgaris, fl	Orange Blossom		X				X			X		X					X				
125. Citrus vulgaris, v. o. fm. fl	Oil of Neroli	X	X				X		X	X	X	X					X		X		
126. Citrus vulgaris, lv	Orange Leaves	X					X			X							X		X		
127. Citrus Bergania, v. o. ri. ft	Oil of Bergamot		X				X				X	X			X		X		X		
128. Citrus Limonum, ft	Lemon									X		X					X				
129. Citrus Limonum, ft. ri	Lemon Peel			X	X			X	X	X	X	X	X		X	X	X	X	X	X	X
130. Citrus Limonum, ft. j	Lemon Juice			X													X			X	X
131. Citrus Limonum, v. o. fm. ft.	Oil of Lemon	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
132. Citrus Limonum, s	Lemon Seed																X				
133. Claviceps purpurea, scm	Ergot	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
134. Cnicus Benedictus, lv. or hb	Blessed Thistle		X		X			X			X		X		X			X	X		
135. Cochlearia Armoracia, fr. rt	Horseradish Root			X			X					X	X				X				
136. Cochlearia officinalis, fl. hb	Scurvy Grass						X			X			X		X						
137. Cocos nucifera, f. o. s	Coconut Oil												X				X				
138. Coffea Arabica, s	Coffee											X					X				
139. Cola acuminata, s. k	Cola	X	X				X		X			X	X				X		X		
140. Colchicum autumnale, co	Colchicum Root			X								X								X	X
141. Colchicum autumnale, s	Colchicum Seed	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
142. Commiphora species, g. res	Myrrh	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
C. Abyssinica		X					X			X		X		X	X			X			
C. Myrrha			X	X	X	X		X		X		X	X			X	X		X	X	X
C. Schimperi											X			X							
143. Commiphora Africana, g. res	Bdellium						X										X				
144. Conium maculatum, fl., hb. or lv	Poison Hemlock	X										X					X				
145. Conium maculatum, ft	Poison Hemlock Seed						X					X					X			X	
146. Convallaria majalis, fl	Lily of the Valley												X		X						
147. Convallaria majalis, fl. hb	Lily of the Valley	X					X			X		X					X		X		
148. Convallaria majalis, rh. & rt.	Lily of the Valley											X								X	
149. Convolvulus Scammonium, rt	Scammony Root			X													X		X		X
150. Convolvulus Scammonium, g. res	Scammonium						X					X					X			X	
151. Convolvulus Scammonium, res	Scammony Resin			X	X					X											
152. Copaifera species, olr	Copaiba	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C. coriacea						X		X			X	X			X				X		
C. Guyanensis		X				X	X	X		X	X	X			X				X		
C. Langsdorffi						X	X			X		X			X			X		X	
C. officinalis		X				X	X	X		X	X	X			X		X	X	X		

| | | |

LABORATORY NOTES ON COLOR TESTS.*

BY G. H. P. LICHTHARDT.

Five years ago the author submitted the following formula as a reliable identification test for caramel in flavoring extracts:

Tannic acid	1.00
Sulphuric acid (1.84)	.75
Water to make	50.00

The tannic acid is dissolved in about 30 Cc. of water, the acid is added, and, after the precipitate which is formed is dissolved, the quantity is made up to the required weight.

I have not found it necessary to change the original formula, which has been found to keep well and not lose its efficiency. This test has since been used in the laboratory upon the many different articles which came to my notice while city analyst of the city of Sacramento, and it was found that not only was it possible to detect caramel in flavoring extracts, whisky, brandy, and other liquids, but also in many other preparations, such as ready-made medicines, vinegar, and in one case it enabled me to expose a fraud in a celebrated medicine vendor case.

An attempt was made to detect chicory in coffee infusion, but unsuccessfully, as it was found that, while chicory infusion gave a dark precipitate, coffee also gave a more or less colored precipitate; while it differed from that thrown from chicory, it cannot be distinguished in an infusion of a mixture of these two substances.

In the case of vinegar the liquid is carefully neutralized and the test applied in the usual manner, which is: to about 5 Cc. of the suspected liquid there is added an equal amount of the test solution. The mixture is slightly heated and allowed to stand for 24 hours, when, if caramel is present in the original solution, a dark-colored precipitate will be deposited.

The identification of the source of color in food and drug analysis is rather a difficult one, and one must not depend upon any one test, but should ever be on guard to prevent error. This was rather forcibly brought to my notice some years ago in regard to the double dyeing test for coal-tar colors. A number of oranges were sent to the laboratory for examination. Their color was not at all normal, but appeared to have been dyed. Upon investigation it was found that the coloring matter would dye wool from an acid bath; that the color could be removed from the wool by dilute ammonia, and that it would again dye from the ammonia solution when this was rendered acid; also, that the color was very soluble in alkaline solutions, especially in dilute ammonia.

It was found that the natural color of oranges and of lemons has this peculiar property which is analogous to the behavior of the coal-tar colors. The method of double dyeing has long been used to distinguish these colors, but it has been my observation that one should not depend thereon as a positive test.

---

* Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., San Francisco meeting.

HISTORICAL REVIEW OF SOAP MANUFACTURING.*

BY JOSEPH ABRAHAM.

This paper is partially a compilation taken from various books, journals, and other sources, together with results of the author's experience in the manufacture of soaps covering a period of forty years.

Soap is mentioned in the Old Testament, and the Hebrew words used in the passages Jeremiah ii: 22, and Malachi iii: 2 are stated by authorities to refer to vegetable and mineral lyes; *i.e.*, potash and soda in some form.

In Homer's time the cleansing of clothes seems to have been effected by simply rubbing or pounding in water without any addition, for he tells how Nausicaa and her attendants washed clothes by stamping them with their feet in pits filled with water.

Later on the juices of certain plants were employed as detergents, also natural soda and wood ashes. The fact that the strength of alkalies can be increased by lime was already known to Palus Egina. Fuller's earth was, however, the principal agent used for washing in ancient times, the fuller's art being due, it appears, to one Nicias, the son of Hermais. The Roman fullers (*fullones*), who washed dirty garments, were persons of no little importance. Their trade and manner of carrying it on were regulated by laws. At one time fuller's earth, found of a superior quality in Staffordshire and other counties of England, was considered so indispensable for the dressing of fabrics that it was made a contraband commodity, and its exportation made equally criminal with the heinous and wicked export of wool.

The elder Pliny gives us the earliest account of soap as having been first manufactured by the Gauls, and used by them as a cosmetic and for dyeing the hair red.[1] Dyeing the hair red shows the presence of free alkali.

He also states that it was made from tallow and ashes, the best being prepared from goat's suet and beechwood ashes, and that the Gauls employed it both in a solid and liquid form.

From this statement by Pliny it has been generally concluded that the invention of soap was due either to the Gauls or the Germans.

E. Moride is of the opinion that Pliny's statement simply refers to the application of soap as a cosmetic and hair-dye, and believes the Phœnicians, who settled in Gaul 600 B.C., to have been the actual inventors of soap.

It cannot, however, be supposed that the first soap was an artificial product like that of the present day. It was very likely a mixture of oil and wood ashes, which was used as a salve in eruptions of the skin and similar diseases. Later on it may have been accidentally discovered that more effective salve was obtained by mixing the wood ash with water and burnt lime before combining it with the oil. Thus, no doubt, products were gradually obtained which resembled the

* Read before Detroit Branch, A. Ph. A., January, 1916.

[1] When Praxiteles was asked which of his works in marble he valued most, he is said to have answered: "Those on which Nicias has set his mark." Pliny explains this expression by the comment, "So much importance did Praxiteles attach to the circumlition (covering of color) applied by Nicias." This passage was for a long time the principal foundation for the theory that the Greeks painted their statues, which is now confirmed by the works themselves. The hair of the Hermes of Praxiteles had a red color when discovered.

present soaps of Algiers, of which Leon Droux writes: " In the interior of Algiers the Kabyles bring to market a mass which serves the double purpose of a remedy and for household use. It is a soap prepared almost in the cold way, of a slightly yellowish color, somewhat transparent, and of a jelly-like consistency, but with a very small content of water. It is made from olive oil and lye, the latter being prepared by allowing water to percolate through a mixture of wood ashes and burnt lime. The Arabs used the salve-like product thus obtained for affections of the skin, as well as for household purposes, and for washing wool to be worked into tissues."

As a detergent, soap is first mentioned by the authors of the second century after Christ. The celebrated physician, Galenus, speaks of it as a detergent as well as a medicament, and considers the German soap as the best, and the Gallic as the next in quality.

But little is known of the further gradual development of the soap industry. Marseilles, it is said, carried on a considerable trade in soap as far back as the ninth century. In the fifteenth century Venice was the principal market, but was outstripped in the seventeenth century by Savona (whence the French name for soap, "*savon*"), Genoa, and Marseilles.

It is somewhat uncertain when soap-making was first introduced into England, but it was probably in the fourteenth century. The first patent for improvements in the manufacture of soap was obtained in 1622 by Messrs. Jones and Palmer, of London. At the same time a company obtained a monopoly for the manufacture of soap, paying annually a tax of $10,000 for 3000 tons of soap.

In France the monopoly system was also in force in the seventeenth century. In 1660, Pierre Rigat, a merchant of Lyons, made a proposition to the king to manufacture by special methods sufficient soap for the needs of France without importing any of the materials required in the manufacture. Louis XIV accepted the proposition and granted him the sole privilege for twenty years of erecting factories for the manufacture of white, mottled, and all other kinds of soap in any location it suited him. The six or seven factories then in existence were allowed to remain, but under the condition that they should not increase their capacity and would sell their products to Rigat at a fixed price. This patent, being the cause of many disputes, was revoked in 1669.

But little is known about the soap industry in Germany during the early centuries.

The business was carried on on a small scale, and this could not well be otherwise, since, with the impure raw material, principally crude tallow and wood ashes, one boiling frequently required as many days as hours at present. The industry was further hindered by the general practice of every household preparing its own soap, which continued up to the introduction of artificial soda and tropical vegetable fats. But since then many large factories have been established, and, as the German soap-boilers applied to the trade its true chemical character, they produced superior goods. The soft soap of Germany is still much used for household purposes as well as for manufacturing, and it has acquired a reputation for excelling in quality that of other countries.

Not much advance was made in the manufacture of soap until at the beginning of the present century it commenced to attract the attention of scientific men, and Leblanc gave to the world his splendid process for the production of soda from common salt.

The next great discovery, and not second in importance, was due to Chevreul, who, by describing the exact constituents of the fatty bodies and making known

the processes for their separation, raised soap-making from empiricism and guesswork to its present position as a truly scientific art. By establishing the practical and scientific basis upon which the soap industry is now carried on, Chevreul and Leblanc may be considered as its founders.

The introduction of new fats and oils, especially of palm oil, palm-kernel oil, and coconut oil, added an important variety to the list of soaps, particularly of toilet soaps. The employment of caustic soda, which enables the soap-boiler to prepare with great ease caustic lyes of a high degree, was also of great importance, as well as the production of potassium chloride, and that of caustic soda in the electrolytic way.

A considerable change in the mode of boiling appears to have been brought about by the use of fatty acids for the manufacture of soap, and the saponification by alkaline carbonates connected therewith. When, about fifty years ago, the price of glycerin rose enormously, many factories engaged in the business of abstracting the glycerin from the fats and selling the fatty acids to the soap manufacturers. Some larger soap plants also installed at that time autoclaves for the saponification of fats, and the question has recently been again agitated, particularly by the introduction of fermentative splitting of fat, chiefly because the latter requires a less expensive plant than autoclave saponification.

Material changes and improvements have been made in the machinery used in the manufacture of soap. In this country there has been a steady progress in the improvements constantly making in this important branch of industry, until now we are producing goods which for quality compare favorably with any made elsewhere; moreover, we have invented much new and improved machinery and apparatus that greatly facilitate the processes, saving labor and time and improving the quality. Thus the United States is at this time but little behind any other country, either in the amount made or in the quality of the article; while in the economy and facility of their manufacture this industry is fully abreast, if not in advance, of that of nearly all other countries, and is steadily progressing, so that it cannot be long before we shall equal in quality and excel in quantity.

The primitive system of slabbing by hand and drawing a wire, in parallel lines uniform distances apart, through the frame of soap, has been almost entirely replaced by mechanical slabbing devices. Mechanical crutchers have been largely substituted for hand crutchers, thus doing away with the laborious work connected with the latter. Great improvements have also been made in presses, this being of importance not only for toilet soaps, but also for cosmetic soaps, as more value is now attached to the external appearance of the latter than was formerly the case. Iron frames are now largely used in place of wooden ones. To prevent the soap from cooling too rapidly, the frame is sometimes enveloped in a poor conductor of heat in the form of a mattress stuffed with tow.

In modern times it has been endeavored to shorten the time for production of soap by avoiding long cooling in the frames. Pioneers in this respect were A. and E. des Cressonieres, of Brussels, with their "*broyeuse secheuse continue.*" While only dried soap could formerly be used in the milling machine, the above-mentioned apparatus allows of the working of the hot liquid soap as it comes from the kettle, and soap finished in the kettle yesterday can, perfumed and colored, be brought the next day into commerce. This invention was originally intended only for the preparation of milled toilet soaps, but it was soon found to be of use also for the manufacture of various kinds of domestic soap, and the idea has been utilized in the construction of soap-cooling machines.

The manufacture of soap in the closed boiler under pressure has been fre-

quently tried. Thus Arthur Dunn, a number of years ago, patented in England a process the object of which was to accelerate the process of saponification by effecting it in a pressure boiler at a temperature of from 302° to 320° F. Moveau later on proposed to effect the manufacture of soap in a pressure boiler provided with a safety valve. The boiler was furnished with a stirrer and was surrounded by a jacket into which steam for heating the boiler or water for cooling could be introduced. A temperature of 302° to 320° F. was produced in the boiler. Previous to boiling, the fat and lye were introduced through a manhole, which was then closed; after the air had been expelled the safety valve was also closed. Additions of fat or lye required after the commencement of boiling were forced into the boiler by means of a pump. The spent lye and finished soap were discharged through a pipe provided with a stopcock which passed from the bottom of the boiler through the jacket.

However, all these methods for the preparation of soap in pressure boilers have been abandoned because they did not prove satisfactory, and there is no probability that the desired result will be attained by such experiments. Saponification is, to be sure, rapidly effected in a closed boiler under pressure, but the saponified fat is not soap such as is demanded by commerce. Besides the saponification of the fats, there are other operations in the production of the artificial product known as soap, and in order to be quite sure these operations can only be carried on when the soap-boiler has the soap before him in the open kettle.

Manufacture of soap is at the present time connected with greater difficulties than it was thirty or forty years ago. The frequent changes in the prices of raw materials, while the prices of the soaps themselves have become very low, allow no longer of work by rule of thumb, and force the soap-boiler to adapt his manufacturing processes to prevailing conditions in order to enable him to compete with others.

RAW GOODS USED IN THE MANUFACTURE OF TOILET SOAPS.

Raw goods used in the manufacture of the better grade of toilet soaps are as follows:

Coconut oil (Cochin), coconut oil (Ceylon), palm-kernel oil, bleached white tallow, unbleached tallow, olive oil, etc.

Cochin coconut oil, at ordinary temperature, is a solid white fat possessing a bland taste, and, when fresh, a peculiar, although not unpleasant, odor of the coconut. This oil is chiefly used in soap-making, but during recent years vegetable butter has been manufactured by the Schlicks process from Cochin coconut oil by treatment with alcohol and animal charcoal whereby the free acids are removed. This product is sold under various names, such as coconut butter, vegetable butter, lactine, vegetaline, neucoline. The color of this product is perfectly white; same consistency as butter, with a sweet, agreeable flavor and free from any tendency to turn rancid. Cochin coconut oil is obtained, as the name conveys, from Cochin, China, Siam, and the Malabar Coast.

Ceylon is the second-quality oil manufactured from coconuts. This is obtained from nuts which have fallen from the tree and are collected by the natives and the oil extracted by either expressing or boiling. It is then filled into large barrels and sold to the middleman, who accumulates sufficient for shipment and then exports same to America and Europe.

Coprah coconut oil is fat obtained from the dried-out kernel which has been exposed to the sun or kiln-dried, filled into bags, exported to Marseilles, in France, Hamburg, in Germany, or Hull, in Great Britain, where it is treated and the oil extracted and then in turn exported to America.

Palm-nut oil is obtained from the kernels of the palm-tree fruit. The kernels are imported from Europe, and the fat is obtained from them either by expression or by extraction with solvents. The color of the palm-nut is white; the darker oils, formerly met with owing to faulty manufacture, have disappeared from the market. It possesses a pleasant smell and an agreeable nutty taste. When fresh, the oil is neutral, but on keeping it easily turns rancid with liberation of free fatty acids. Palm-nut oil is chiefly used for soap-making.

Tallow is the fat extracted from the carcasses of beef, mutton, or goats. The quality used for perfectly white soaps is bleached, but for other soaps unbleached tallow answers all requirements.

Olive oil is extracted from the fruit of the olive tree by expression or by extraction. The quality of the olive oil depends upon many circumstances, such as the variety of the olive itself (there are 300 or more varieties of olive trees), the degree of ripeness of the fruit, the manner of gathering, the mode of expressing, etc. The finest oils prepared from the picked fruit, under the names of Virgin, Provence, Aix oil, are edible. The next quality ranks and is sold in this country as finest Tuscan cream. This is used as salad oil. The next lower grade is used for soap-making, which latter is the one with which we are now dealing. Olives in this case, after the fine oil has been expressed, are subjected to further high pressure, equivalent to 4000 pounds to the square inch, which yields a pale-green olive oil which finds extensive use in toilet soaps.

Caustic soda such as is used in soap-making is manufactured by the direct process of liberating chlorine from a solution of common salt by electrolysis. This splits up the salt solution, chlorine being collected over lime which makes bleaching powder, the sodium being taken up by the mercury which is in the bottom of the tanks used in this process and the sodium extracted from the amalgam with water. This liquid is then evaporated to a solid mass, in which form it is delivered to us. To enable us to use the caustic soda, we dissolve this with water to the various degrees of strength necessary.

Caustic potash is mostly manufactured from potassium sulphate which is derived from the so-called Stassfurt salts found in enormous quantities about twenty-five miles southwest of Magdeburg. This mineral is treated by the Leblanc process by roasting in a furnace equal quantities of potassium sulphate, limestone, and small coal. The fused mass is taken from the furnace and allowed to cool, when it is dissolved in water until the potassium carbonate which it contains is dissolved out. This solution is treated by boiling with lime, which converts the carbonate into potassium hydroxide. The solution is then concentrated until it becomes solid, and is then filled in drums.

PROCESS OF MANUFACTURING TOILET SOAPS.

The tallow, coconut and olive oils, or other fats are first of all melted, each one by itself, in square iron tanks and pumped from them into the soap kettle. When the full quantity necessary for the boiling of soap is pumped into the kettle the process of boiling begins.

Steam is turned into the kettle through open coils, and caustic soda slowly pumped into the melted fats until there is sufficient added, a matter that is left to the judgment of the man in charge of the process. This mixture is boiled until saponification is complete. When this point is reached, salt is added to the kettle to separate the soap from the lye. When this is accomplished, the steam is shut off and the kettle allowed to stand at rest until the following morning. The waste lye in the bottom of the kettle is then drained off through a valve and pipe at the

bottom of the kettle. When all the lye is removed, steam is turned into the kettle and caustic soda added slowly as in the previous operation. This is again salted out and the kettle allowed to rest until the following morning. This ends the second operation.

The third operation, or washing change, is the repetition of the previous operations, only after the lye is drained off it requires a much smaller amount of caustic soda to perfectly saponify the whole of the remaining fats that may have escaped in the two previous operations. When satisfied that saponification is complete, salt is added, and when separation is nicely balanced the kettle is allowed to remain until the following morning.

Fourth and last change: the lye is drained off the kettle as in previous operations, and steam turned into the kettle and boiled vigorously. This is the last and most important operation. This is the point where skill and judgment are required such as cannot be obtained from any text-books on the subject. It entirely remains with the soap-maker to finish the product in the most satisfactory manner, such as experience only can teach. The operation of boiling has now been completed. The kettle of soap is now allowed to stand for three, four, or five days, or more if necessary, until the temperature of the soap drops to about 140° to 160° F. The soap is then ready to pump out into frames of a capacity of about 1300 pounds. These frames are so built that the sides and ends can be taken off when the soap becomes solid (which takes three to five days), when it is cut up by wires into slabs, bars, and chips. These chips are then placed in a dry room to take out all the excess of moisture and put same in condition for milling. The soap as it is pumped from the kettle contains about 62 percent of fats, but after it leaves the soap mills it contains 80 to 82 percent fats. When the chips are sufficiently dried they are taken to the soap mill and crushed over the rollers several times until a perfect ribbon rolls off on the opposite side of the machine. During this milling process perfume, colors, or medicinal substances are added. These ribbons are transferred to the plodder and are there compressed by a large screw eight inches in diameter and forced through the orifice in front of the machine in a long bar, the necessary size for the tablet of soap required. The long bars are placed on a cutting table, cut into sections, and then placed in the stamping machine and there subjected to further pressure of eight tons, which gives the bars of soap the necessary shape and lettering.

This covers the whole process of soap manufacturing in general. There are many specialties which are made by different processes which do not concern us.

Soap powder is made in the same manner as the soap mentioned above, only in this case coconut oil and tallow only are used. This soap, after being dried in chips, is subjected to further treatment by grinding it into an impalpable powder. This powder must be absolutely dry, and, as all soaps are slightly deliquescent, it is necessary to keep same in a dry place, as it absorbs moisture from the atmosphere, especially if stored in a humid or damp place.

Soft soap or shampoo is made of a mixture of tallow, coconut oil, and in many cases a little castor oil. In this case caustic potash is used. This makes the soap soft, clear, and transparent and easily soluble in water, as should be the case for the purpose for which it is required.

Liquid soaps are made of coconut oil, tallow, and castor oil. These also are made with caustic potash at the lowest possible temperature, and, to facilitate the free lathering qualities of liquid soap, a quantity of alcohol is used. The coloring matter and perfume are added when quite cold. It is filtered and bottled ready for the trade.

USES OF SOAP.

The various functions desired in the use of soaps are that they should be good detergents both for the removal of dirt and any natural secretion or fat from the skin. To do this without injury to the epidermis it is necessary that the soap should have a very slight amount of free alkali. The free alkali removes a small portion of the natural fats of the skin, leaving the pores clean and open so that they can perform their natural duties. Superfatted soap, or, as it is commonly known, soap with an excess of free fat, will not answer this purpose.

Most persons have long believed that a liberal use of soap and water insures bodily cleanliness. It will be a shock to learn, therefore, that some persons have skins that soap only makes dirty. This is on the high authority of the London Lancet.

The active principle of all soaps is alkali, the action of which ordinarily is to separate dirt from the oil of the skin and enable it to be washed away.

But it seems that certain skins are not proof against the action of alkali, and soap acts as a detergent because it forms an emulsion with dirt and the liberated alkali removes the fat which causes dirt to cling. Any inquiry, therefore, turned to the question of the effects of soaps upon the skin amounts to the determination of the sensitiveness of the skin to the action of alkali.

Owing to hydrolysis, soaps when dissolved in water exhibit a marked alkaline reaction, and this is true also of the so-called superfatted soaps, though these are generally made with superior materials, and for that reason may be preferred. An interesting contribution on the subject appears in the reports recently issued from the laboratory of the Royal College of Physicians of Edinburgh. In an article entitled "Soaps and Their Effects on the Skin," Dr. Gardiner points out that among the more expensive toilet and superfatted soaps the proportions of mineral ash and alkali are at least as high as in the coarser types.

When an alkaline solution such as that of soap touches the skin there is induced, he says, both an excessive secretion of the acid sebum and sweat, and a solvent effect on the protective epithelium. Reviewing the different ingredients found in soaps, he concludes that all soaps from their chemical constitution must be irritant to the normal skin. The effect varies, he states, with the individual skin, and is more pronounced in senile and diseased skins. Cotton-seed oil and rancid fats, according to his observations, are probably largely responsible for the irritant effects in cheaper soaps.

Castor-oil soap, he finds, is least irritating, but it has the disadvantage of being too freely soluble and therefore wasteful, while it is apt to become rancid. Coconut-oil soap is decidedly irritating, while palm-oil soap, though still an irritating variety, is less so, and tallow soap shows a low irritating value.

If these deductions are correct, Dr. Gardiner thinks they supply a reason for the bad effects of modern domestic soaps of the cheaper and clothes-washing kinds, as they are made mostly from cheaper fats and the cheap oils, coconut and cotton-seed. Formerly tallow and olive oil were more used, and the evil effects of soaps were not so pronounced at that time.

No one can be in touch, he says, with the out-patient department of a large hospital and not observe the economic loss, not to speak of physical damage, due to soaps and soap powders. If hands were considered as well as the clothes, and more of the old-fashioned joint oil pressed into service, the results, he considers, would tend to lessen this serious and increasing occupational dermatitis.

Another of the uses to which soap is of the very largest benefit is that of a germ destroyer, and Dr. H. W. Hill, of the State Board of Health of Minnesota,

declares that the frequent washing of the hands with good soap would prevent the spread of many contagious diseases. It has lately become known that soap possesses disinfectant and deodorizing properties in a high degree. According to an experiment carried out by the Berlin Health Commission, a solution of one part of potash soap in 10,000 parts of water completely prevented the development of the bacilli of a permanent cattle disease, and the said commission has recommended a solution of potash soap, 15 to 10,000, as a first-rate disinfecting medium.

In a recent test on soap solution on various bacilli the following result has been compiled:

In a one percent soap solution on cholera bacillus in one minute there was no growth. The same applies to diphtheria, typhoid, plague, tuberculosis.

It is also found that potash soft soap is eight times as powerful as potash solution, which goes to prove that any good soap is a powerful antiseptic and that the purer the soap the stronger are its antiseptic properties.

In a paper presented before the International Congress of Zoologists in 1907, the writer stated: "We have confirmed the fact that the insecticidal value of soap is very considerable."

There are two classes of insecticides—those which act as poisons on the food of the insect, such as sprinkling the place they infest with soap powder, or the external kind which kills the insect by simple contact. This latter system is the one which interests us mostly.

In order to wet a given body in the best way a liquid must be chosen which has a low surface tension. This can be obtained by making a solution of sodium oleate (soap). The same wetting effect can be produced by the addition of 5 percent of a solution of 0.1 percent. Solutions of one in a thousand are as efficient as those of 50 percent. For hard water a little carbonate of soda should be added. This solution is taken through the vineyard, the hop plantations, or through trees, and is sprayed over the leaves and branches early in the season. This solution instantly wets the insects, dries on them, and causes their death.

As you are probably aware, there is no other article which is used in so many different ways as soap. A few of those who utilize soap largely are silk dyers, wool scourers, toilet supply companies, dry cleaners, carpet cleaners, disinfecting companies, auto garages, wire spinners, wire drawers, veterinarians, gardeners, farmers, etc.

In 1909 the soap manufactured in the United States was valued at $111,357,777, and 18,000 persons were engaged in the manufacture of it. It is peculiar that, though the number of soap factories has been decreasing since 1859, the production has, of course, enormously increased. This is accounted for by the elimination of the small makers, those who in the days of our fathers and grandfathers used to peddle the soap of their own making.

In this progressive age soap manufacturing requires a high degree of scientific knowledge and skill such as cannot be retained by the small factory. The excessive cost of small productions also militates against the small man's survival. He is under a great disadvantage in the purchase of raw goods on account of purchasing small quantities.

The cost of production for fifty tons of soap is only little more than for producing five tons, so that without a large amount of capital it is very difficult in these days for a small manufacturer to exist.

The civilization of a country can also be estimated by the quantity of soap which is produced or, in other words, used per capita of population. The consumption of soap in the United States and Great Britain is about equal, namely, fourteen pounds, while the consumption in Russia is one and one-half pounds per

capita. The same amount is approximately consumed in South America, India, and China. This is not because the people will not use soap, but it is on account of the poor wages they are earning and the distance from the place of importation, which places a prohibitive price upon this commodity. In the interior of China, ten years ago, it was the writer's experience, when travelling four hundred miles from Shanghai, to see in the native market small pieces of soap used as money. This evidences that there are markets open in these countries for an enormous amount of goods when we shall be in a position to deliver to them.

The world improves with each passing year
Because each man in his little sphere
Takes off his jacket, grins and sings,
And keeps on doing the same old things.

LABORATORY, FREDERICK STEARNS & COMPANY.

IDENTIFICATION OF CASCARA ADULTERANT.

The adulterant of Cascara bark noted by F. A. Miller (Jour. Am. Pharm. Asso., 1912, p. 1207), but which he did not identify, and again mentioned by Gathercoal (Jour. Am. Pharm. Asso., 1915, p. 70) and there pronounced to be the bark of a *Prunus,* has been definitely identified as the bark of *Prunus padus.* This bark is a commercial article in Germany, according to Prof. E. M. Holmes, and has been received in England as a substitute for wild cherry bark.

The adulterating bark closely corresponds in internal structure to a specimen of fresh *Prunus padus* bark recently received from Kew Gardens, London.

No further report has been received of any of this false Cascara since the shipment to Chicago in 1914. Probably the attempt of some unscrupulous European exporter or American importer to depreciate the standard of American cascara was frustrated by the publicity given to the matter by Mr. Miller in 1912. —*E. N. Gathercoal,* University of Illinois School of Pharmacy.

PETROLEUM WHITE OILS.*

BY DR. R. E. HUMPHREYS.

For many years white paraffin oil has been employed with the endorsement of physicians for the treatment of constipation and other intestinal troubles. It is a somewhat viscous liquid that is not at all changed chemically by the intestinal secretions nor absorbed from the alimentary tract. So far as is known, it can be given in very large doses without any bad effect. In the intestinal tract it acts as a lubricant and protective agent; is not at all affected by the processes of digestion; its lubricating action is without irritation, and there is no artificial peristaltic activity, such as is caused by laxative and cathartic drugs. It assists in bringing about bowel evacuation solely because of its action as a lubricant. In the upper intestinal tract the oil becomes mixed with the food and waste products of digestion, so that ultimately the fæces are softened, the entire tract is lubricated, and the expulsion of the fæcal mass is brought about more promptly and with greater ease. It is very probable that it also exerts in the bowel a disinfectant action on some of the strains of fæcal bacteria.

These white oils have hitherto been manufactured almost exclusively from distillates of Russian crude petroleum. For a good many years their consumption in this country was very limited, owing to the fact that their therapeutic value was not generally recognized. For this reason, and because their production involved complicated and expensive processes under the control of Russian manufacturers, American refiners produced no white oil until the present war cut off the supply. In the meantime the demand had grown so amazingly that our refiners felt justified in making an effort to produce the oil from the crudes found in Pennsylvania, Mid-continent, and California fields. There is no reason why such oils manufactured from American crudes should not be the equal of, or even better than, those having their origin in the Russian crude. The paraffin crude oils are as amenable to treatment as the Russian. The latter are composed chiefly of naphthene hydrocarbons, and the naphthenes are not quite so stable as the paraffins. They stand between the paraffins and the olefins.

The method of treatment of the distillates from crude oils of whatever origin consists in the complete removal of all unsaturated hydrocarbons and sulphur and other derivatives. The means by which these things are brought about vary with each manufacturer, and there have been a number of processes patented both in this country and abroad. One American manufacturer has secured the Russian patented processes and is using them with great success on American crudes. The resultant oils should be colorless, tasteless, odorless, free from fluorescence, acids, alkalies, sulphur compounds, and other deleterious substances.

Occupying the field to the complete exclusion of white oils made from crudes of a different composition, the Russian oils became standard, as it were; and the tests tabulated in the British and United States Pharmacopœias, and the specifications made by the dealers were based upon the tests and the properties of the Russian white oils. It came to be believed that the oils should be as viscous as castor oil and that they should have a high specific gravity; but it has been thoroughly demonstrated that the product of American manufacture having a medium viscosity and a specific gravity of 0.85 to 0.86 is just as effective as, and even

* Read before the Chicago Branch, A. Ph. A., November 16, 1915.

more palatable than, the Russian oils. The specific gravity of products from Russian petroleum is naturally higher than from American, because of the difference in chemical composition. But there can be no therapeutic significance in a difference of specific gravity. When the oil is very viscous it not only clings an objectionable time to the tongue and throat but does not so effectively permeate the fæces. The thinner oil disappears quickly from the mouth and is taken very readily by children and the sick.

Certain tests have been made to determine the purity of these oils. One, called the " mixed acid test," is made by mixing equal quantities of nitric and sulphuric acids and shaking two volumes of the mixture with one volume of the oil. If a deeper than canary color results the oil is judged not to be pure. Such a mixture of acids as the above will act upon all petroleum hydrocarbons, even those of the paraffin series. If the strength of the acids and all conditions of making the test are not carefully stated and the test made by a competent chemist, the results will not be useful. The activity of the acids is entirely too drastic. The action of ultra-violet light has also been proposed as a test. This is also too drastic, as exposure to these rays affects all petroleum hydrocarbons. The manufacturing processes necessary to make an oil that is colorless, odorless, tasteless, and free from fluorescence insures the removal of all harmful substances.

Very excellent American oil, in volume equivalent to several million pint bottles, has been marketed during 1915 with completely satisfactory results to the purchasers. There would seem to be no reason why American oil should not forever displace the Russian product. Those who are entrusted with the making of specifications for white oils should remember that the specifications of the pharmacopœias are based on Russian oils. Because Russian oils, only, occupied the field in the beginning, and because it was presumed that such oils could not be manufactured from any other crudes, our developing American industry in this particular field should not be saddled with antiquated specifications in regard to specific gravity and viscosity, but should be given every opportunity to supply its own field on the basis of specifications adapted to American crudes.

THE DEVELOPMENT OF SCIENTIFIC MEDICINE.

An investigation of medical history shows two developmental periods which interlace with each other to some extent. In the early days our ideas of disease and its treatment were quite indefinite and general and were founded, in the main, on hypotheses and theories which had no particular scientific basis. In later years, research and experimentation have furnished the scientific basis for the establishment of various facts and for certain seemingly sound theories in addition. It is true, some of the theories brought forth have been illogical deductions from the facts at hand, others have been formulated as a result of false evidence, improper technic, etc. It is fair to say, however, that medical theories propounded as the result of scientific research are much safer than those originating in the inner recesses of a dreaming mind. It can be said, therefore, that the earlier periods of generalization in medicine have passed, and we are now working in the age when legitimate progress can be made only as a result of careful research and experimentation.—E. F. McCampbell, *Ohio Public Health Journal.*

GREATER COMMUNITY SPIRIT.*

The Baltimore Industrial Survey Report, on page 10, stated that effort may profitably be expended in improving the local demand for local products; that Baltimore manufacturers are supplying but a small part of our home consumption, and that there is a wide gap between local producers and local consumers, tending to produce a feeling of chronic apathy toward local manufacturing enterprises, resulting in discouragement of existing establishments and in neglect of new enterprises. The various trades and civic bodies of Baltimore may very properly individually and in co-operation undertake the work of establishing closer business relations between the manufacturers and merchants of the city, to the end that local effort should receive proper encouragement and stimulation.

By reference to page 53, etc., of the Industrial Survey Report, we find that in general the retail merchants as a class are not reliably informed with respect to, or conversant with, the local industries manufacturing the wares traded in respectively by them, to venture a statement of sufficient weight to merit more than casual consideration.

Coming to the drug business, the report of the Industrial Survey shows that in this particular line there is not so much necessity for special effort to promote a demand for locally-made goods as in many other lines, but I feel that it is most important that the members of these associations be made aware of the conditions as I have outlined them, and exert themselves whenever opportunity offers to promote consumption of home-made goods.

I am convinced that there is more to be considered, and that, taking the drug business as an example of all the classes of retail merchants, much can be accomplished in making retail business more profitable, and hence in promoting the best interests of our city. I have talked with several young druggists just entering the business, and, in response to my question as to their plan for building up a business, have been surprised to note the general dependence on price-cutting for this purpose. I have talked with those who I believe are in a position to know the facts, and am informed that the drug business is not to-day as profitable as it was a few years ago. I have heard on the street comments with regard to price-cutting on the part of the down-town druggists, and the opinion seems to be that there has been a price-cutting war, and that it has progressed so far as to have reached disastrous proportions. For example, I have been told that witch hazel, which, according to the U. S. Pharmacopœia, means 15 percent alcohol, sells regularly at twenty-three cents a pint, and one druggist in this room is selling it at twenty-five cents; the recognized special price has been fifteen cents. Witch hazel, so called, has been sold in Baltimore recently as low as seven and eight cents a pint, but not labelled with the quality. This condition seems to have progressed so far that druggists have to advertise "None sold to dealers." This is evidently a case of druggists living off of each other, instead of off the buying public. This degrades the price, degrades the standard, and undermines confidence. The whole practice of medicine is based on confidence. Half of the relief of the patient is confidence. Would it not be better to exert one's efforts in support of the service

* At the meeting of the Baltimore Retail Druggists' Association and the Local Branch of the American Pharmaceutical Association, held December 13, Mr. Douglass Burnett delivered an address on the subject of a "Greater Community Spirit," from which this article is abstracted.

rendered by the drug store? Would it not be better if advertisements exploited quality and service? Would it not be better to add a bit to the price figure, if anything, than to make a cut? Is it not possible to maintain the price on stable articles, and to advertise special sales on self-made preparations? Can we not be round-figure men?

Mr. Aldred once told a story of a man in the shoe business in New England who had occasion to go to London and open a shoe store. He had determined upon his selling price of shoes at so many shillings, but found that the English people were accustomed to deal always in shillings and pence. His American spirit tempted him to make his price at, say, twenty shillings and no pence, always stating the "no pence." On second thought he felt he might just as well make it six pence, and the result was that all of his prices were so many shillings and six pence. When he had been in business a certain length of time he found that the six pence which had been casually added as a store policy was the one thing that created just the difference between profit and loss.

Of vital importance to the success of any business enterprise, no matter how small or how large, is the question of education along our specific business lines, and then of mutual helpfulness. I think that these two subjects properly worked together will prove effectual remedies for many business troubles.

This educational effort is of direct benefit to the industry in many ways, but in no one way more particularly than in identifying the men permanently with the employers for whom they are now working. How much better is it to have our help satisfied and contented in their work than to have them discontented and continually leaving our employ, opening up competitive stores, price-cutting and demoralizing the business!

There are men here to-night whom I know to have as partners young men who were formerly their clerks.

But it is not only a question of educating the young men—it is one of self-education. I venture to say that in this Association there are comparatively few men who have finished their education on the subject of necessary store accounting. For instance, how many druggists make it a practice to analyze the accounts at sufficient and regular intervals to enable us to know that all of our legitimate expenses are being met out of the business, including the value of the time that we, as owners of our stores, are putting in the business, including the interest charges on the capital that we have invested; that we have in the selling price a sufficient allowance for overhead charges; that such and such a figure is or is not a proper allowance for overhead, and that we are obtaining a surplus of so many percent? Do we make it a practice to mark our goods accordingly with a sufficient margin to accomplish these things? You may say, why the surplus? And the answer is, for the purpose of these improvements that have been talked about. How can a store continue to grow and be successful in its business unless it has means of financing the improvements, such as the white paint that Mr. Lyons has spoken of; the improved show-window displays, the lighting of the store and windows that are such helpful aids to business, and the erection of such show-windows as Mr. Lyons suggested for the Mount Royal Avenue side of that prominent drug store.

There is room for many constructive efforts in every retail business. I would say to the Druggists' Association of Baltimore that, no matter how many or how few committees you may have, or how active or how dormant they may be, you have room for more educational effort to develop the spirit of mutual helpfulness. You have room for more work on the part of a co-operative committee. I would

conceive the work of the co-operative committee to be, to supervise and suggest the operations of stores that need help in manifest lines, as, for instance, in the way of improvement in the show-windows, lighting, etc.; to work with The Advertising Club of Baltimore and the Merchants and Manufacturers' Association and other trade organizations in studying the needs of the business; to act as counsellor and guide to those who are disposed to wrong practices, such as price-cutting; and to act in conjunction with the Credit Men's Association to improve the character of business risks in the trade.

I wish I had time to read you an article that appeared in The New York Times of December 5. The Wholesale Men's Furnishing Association found that too many men were failing to discount their bills, and that there were too many receiverships and cases of retail businesses being conducted unprofitably. They formed an Advisory and Adjustment Committee, meeting every Tuesday, and made arrangements for all cases of slow-pay accounts to be reported by the retail merchants, and they have found many cases in which helpful suggestions have resulted in putting the business on a paying basis, so that the merchants could discount their bills and obtain loans from the banks, where otherwise that would be impossible. I am quite sure that a committee of "business doctors" for the drug business who would seriously consider this situation and put active plans in force would be of benefit to the business.

I would like to suggest that your Association offer prizes for the best suggestions for show-window displays, these prizes being open to all of the employees of the Retail Druggists' Association, and that prizes be offered for suggestions of best methods of promoting the business.

I am quite sure that, if your Association will go about these matters constructively and seriously with the object of promoting a better community spirit and a greater active co-operation on the part of the members of the Association, they will not regret the time and trouble spent in the work.

WASTEFUL SAVING.

Modern efficiency methods have upset many old notions about thrift. Time is the one thing that cannot be replaced or regained: the minutes lost are gone forever. A letter in a morning paper illustrates the point. The writer indulges in self-praise because he hunted for a cent he dropped on a subway platform. A companion urged him to let it go and catch the train. He detained his friend, both missed the train, but he found the cent.

These men may have had nothing better to do than hunt for that cent, but if they were losing time that should have been devoted to work or business they were very wasteful. They must have lost five minutes at least, ten minutes of working time for both. Few men work for less than twenty cents an hour, and on that basis it cost more than three cents to find that cent. On this principle factory hands are told not to pick up a nail when they drop one. The nail costs less than the time consumed in picking it up. The old goody-goody stories, such as that of the man who always untied the knots and saved the twine instead of saving time by cutting it when unpacking goods, are out of date. Waste of time is the worst waste of all.—*New York Commercial.*

PHARMACEUTICAL FORMULAS

PROPOSED FOR A. PH. A. RECIPE BOOK

Thus far a collection of 114 Pharmaceutical Formulas has been compiled and published in THE JOURNAL, Vol. I, pp. 169, 366, 505, 637, 760 and 1307 (Feb. to Nov. 1912). Beginning with the March 1916 number these Formulas will be continued in monthly instalments by the Committee, and *all* members of the American Pharmaceutical Association are earnestly requested to render assistance by sending suitable formulas and criticisms to the Chairman,

OTTO RAUBENHEIMER, Brooklyn, N. Y.

Contributed by the Chairman:

No. 115.

TINCTURA FERRI ACETATIS ÆTHEREA.

Ethereal Tincture of Ferric Acetate.

Tinctura Martis Klaprothii. Klaproth's Tincture of Iron.

(Modification of D. A. B. 111.)

Solution of Ferric Acetate (N. F. IV)	75 mils
Acetic Ether } of each	12.5 mils
Alcohol } of each	12.5 mils
To make	100 mils

Mix acetic ether and alcohol and gradually add to the solution of ferric acetate. Keep the product in well-stoppered bottles in a cool place, protected from light.

No. 116.

THEATRICAL COLD CREAM.

Spermaceti	125 Gm.
White Wax	120 Gm.
Liquid Petrolatum	560 Gm.
Sodium Borate	5 Gm.
Distilled Water	190 Gm.
To make	1000 Gm.

Melt spermaceti and wax, add liquid petrolatum, and continue the heat until the mixture is uniform. Dissolve sodium borate in the water and apply sufficient heat to bring this solution to the same temperature of the oily solution. Add the aqueous solution *all at once* into the oily solution and stir until congealed.

It will be noticed that this is a modification of the U. S. P. formula for *Unguentum Aquæ Rosæ*, which has been found highly satisfactory by the writer. During cold weather, the quantity of liquid petrolatum may be slightly increased. This cold cream can be perfumed according to taste by using the very expensive oil of rose or the cheaper oil of geranium or any other suitable perfume, such as terpineol, neroli, ionone, muguet, etc.

No. 117.

GARGARISMA POTASSII CHLORATIS CUM FERRO.

Golden Gargle.

(Jacobi's Gargle.)

Tincture of Ferric Chloride	12 mils
Glycerin	24 mils
Sat. Solut. Potassium Chlorate, a sufficient quantity,	
To make	100 mils

Owing to the alcohol content of the tincture, some of the potassium chlorate crystallizes out. For this reason, the equivalent, about 4 Gm. of Sodium Chlorate, can be used, which, on account of its greater solubility, remains in solution.

No. 118.

PIGMENTUM IODI COMPOSITUM.

Compound Iodine Paint.

(Mandl's Solution.)

Iodine	1.25 Gm.
Potassium Iodide	5.50 Gm.
Oil of Peppermint	0.75 mil
Glycerin, a sufficient quantity,	
To make	100 mils

Used as an antiseptic and stimulant application for the throat.

No. 119.

BLUE WRITING FLUID.

Methylene Blue	1 Gm.
Glycerin	5 mils
Water	500 mils

A cheap and good writing fluid, well adapted as an ink, for writing labels and for fountain pens.

No. 120.

PIGMENTUM MENTHOLIS ET TOLUOL

Menthol and Toluol Paint.

(Loeffler's Solution.)

Menthol	10 Gm.
Alcohol	60 mils
Solution of Ferric Chloride	4 mils
Toluol, a sufficient quantity,	
To make	100 mils

Used as an antiseptic application to the false membrane of diphtheria.

Contributed by M. I. Wilbert:

No. 121.

PINE OIL DISINFECTANT.

(Hygienic Laboratory, U. S. Public Health Service.)

Pine Oil	1000 Gm.
Rosin	400 Gm.
Solution Sodium Hydroxide 25%.	200 Gm.

The pine oil and rosin are heated together in a covered "enamelled ware" pail until the rosin is all dissolved. The mixture is cooled to 80° C., the sodium hydroxide solution added, and the liquid violently stirred or beaten for at least 10 minutes with a rotary "Dover" egg beater. Sufficient water is added to make mixture to the original weight. The preparation is then cooled quickly by placing the pail in cold water. It is stored in glass or metal containers till used.

(Public Health Rep., 1915, vol. 30, p. 3004.)

Pine oil is a mixture of many essential oils of the terpinol family. It is a by-product from the manufacture of wood turpentine, and probably is the substance which prevents the decay of "pitch pine" stumps. For compounding this disinfectant only the oil from the "steam or solvent" process should be used, and not the oil obtained by "destructive distillation." It is an amber-colored liquid, having the characteristic odor of pine wood, and should be perfectly clear, transparent, and free from any considerable sediment. The market price of such pine oil is about 50 cents per gallon.

Contributed by Lorentz Cantor:

No. 122.

EAU DENTIFRICE.

Star Anise		7.5 Gm.
Oil of Peppermint, Anethol	of each	1 mil
Red Saunders		1 Gm.
Alcohol		100 mils

Macerate for two weeks, then filter and add sufficient alcohol to make 100 mils.

For use as a mouth wash, take about 10 drops to a tumbler of water.

Contributed by Prof. X:

No. 123.

SOLIDIFIED ALCOHOL.

Alcohol	1000 mils
Stearic Acid	60 Gm.
Sodium Hydroxide	13.5 Gm.

Dissolve the stearic acid in 500 mils of the alcohol. Dissolve the sodium hydroxide in 500 mils of alcohol. Warm each solution to 60° C. Mix them and form into suitable containers which have previously been warmed to 60° C. and allow to solidify.

Denatured alcohol or wood alcohol may be used in place of alcohol to make a cheaper product, and the mixture may be colored, if desired, by the addition of suitable coloring material.

No. 124.

ASTRINGENT AND ANTISEPTIC FOOT POWDER.

Alum, powdered	60 Gm.
Tannic Acid	5 Gm.
Salicylic Acid	2 Gm.
Orris Root, powdered	33 Gm.

Mix them and divide into packages of about 2 Gm. each or make into suitable sized tablets.

No. 125.

BRITISH OIL.

Crude Petroleum		35 mils
Barbadoes Tar		105 mils
Crude Oil of Amber, Oil of Juniper	of each	140 mils
Linseed Oil		280 mils
Oil of Turpentine, a sufficient quantity,		
To make		1000 mils

Mix them.

Contributed by John K. Thum:

No. 126.

A. C. E. MIXTURE.

(For Anæsthesia.)

Alcohol	1 part
Chloroform	2 parts
Ether	3 parts

(German Hospital, Philadelphia.)

No. 127.

SOLUBLE CRUDE CARBOLIC ACID.

Liquid Soda Soap, No. 128	1000 mils
Crude Carbolic Acid	100 mils

(German Hospital, Philadelphia.)

JOURNAL REVIEW.*

BY J. W. STURMER.

Introductory.—The members of our Philadelphia Branch who attend our meetings are the very members who read the journals. Accordingly, I run the risk of appearing before you to-night with a bundle of "twice-told tales." Being aware of this, I have decided to gather my material from the chemical journals, and from certain foreign journals, rather than from the American pharmaceutical publications, with which my audience is thoroughly familiar.

On the Stability of Glyceryl Nitrate.—Wilbur L. Scoville, in a paper presented at the New Orleans meeting of the American Chemical Society, called attention to the deterioration of the tablet triturates of glyceryl nitrate (nitroglycerin). He found that tablet triturates containing less than 1/100 gr. deteriorated more rapidly than stronger tablets. Secondly, that tablets prepared from the alcoholic solution were less stable than tablets made from a "paste." Thirdly, that glyceryl nitrate which had been kept over several winters, and had been subjected to freezing several times, was more stable than the freshly-made ester.

Kast and also Hibbard have proved that glyceryl nitrate exists in two forms, known respectively as the labile and the stable forms, the former with a melting-point of 2° C., and the latter melting at 13.2° C. Freshly-made glyceryl nitrate is the labile isomeride. Freezing changes this to the stable form—which agrees with Scoville's observations on the deterioration of glyceryl nitrate tablet triturates.—*Journal Industrial and Engineering Chemistry*, December, 1915.

Mucilage for Paraffin Paper.—

Dextrine	30 parts
Rice starch	30 parts
Acetate lacquer	20 parts
Beeswax	20 parts

—*Journal Industrial and Engineering Chemistry*, December, 1915.

Resin-containing Citrus Oils.—R. T. Will, in a paper on the citrus industry of California, calls attention to the use of a volatile solvent (name withheld) in the extraction of oil of lemon and of oil of orange. He claims for this process a much higher yield of oil than by the "hand process," as used in Europe.

The oil extracted by means of the solvent is darker in color and rich in resin. He claims for the oil much greater stability. Samples kept for five years in colorless glass and exposed to air failed to become terebinthinate. The resins serve as a fixative, and retard volatilization; thus this extracted oil goes further as a flavor than does the European oil.—*Journal Industrial and Enginneering Chemistry*, January, 1916.

Marking Porcelain Ware.—S. B. Kuzirian, of the Iowa Agricultural Station, reports in the Journal of Industrial and Engineering Chemistry, January, 1916, that cobalt nitrate is the most satisfactory substance for marking porcelain ware. The dish is heated over a low flame, and, while moderately hot, marked with cobalt nitrate solution. Moderate heating converts nitrate into cobaltic oxide (black), while prolonged heating at a very high temperature may reduce this to cobaltous oxide, which is brown in color.

An Explosive Mixture.—Sodium nitrite explodes with ammonium bromide. This incompatibility was originally published in the Pharmazeutische Zentralhalle, and abstracted by Merck's Report. The reactions given are as follows:

$$NaNO_2 + NH_4Br = NaBr + NH_4NO_2$$
$$NH_4NO_2 = N_2 + 2H_2O$$

The Toxic Isomers of the Cinchona Alkaloids.—Professor Scoville recently called attention to the incompatibility between quinine and aspirin, and this paper has been widely quoted

* Presented before the Philadelphia Branch of the American Pharmaceutical Association, February 1916.

in the pharmaceutical press. In this connection, one should read also the papers published by H. C. Biddle, of the University of California, on the conversion of cinchona alkaloids into toxines, which are really toxic isomers of the natural cinchona alkaloids. Any organic acid is said to produce this change, which is retarded or prevented by the H ions—hence by ionizable mineral acids. The papers are found in the September (1915) number of the Journal of the American Chemical Society.

The Goeldner Test—a Mistake.—The Goeldner test for cocaine was first published in a Russian pharmacy journal, and has reappeared in German and American publications. The test is as follows: 0.01 Gm. resorcinol is mixed with 6 drops sulphuric acid; then a small portion of cocaine hydrochloride is added, producinig a deep-blue coloration which gradually turns to purple, and ultimately purplish-red. L. A. Ryan, of the University of Pennsylvania, has proved that this color reaction depends upon the presence of nitrites or nitrates, with which substances the test is very delicate. Pure cocaine hydrochloride with pure sulphuric acid and pure resorcinol does not give a blue coloration, and, while the test can be used for nitrites and nitrates, it cannot be applied to cocaine. In view of the fact that a simple and reliable coloration test for cocaine is a great desideratum, it is important to give publicity to the correction of Goeldner's mistake.

[Professor LaWall called my attention to the fact that one of his students, Guy Shearer, in 1911, reached the same conclusion reported by Mr. Ryan.]

A "Real" Volatile Oil of Cade.—An oil obtained by steam distillation from *Juniperus oxycedrus* is now on the market, and is said to be similar in therapeutic properties to the empyreumatic oil, obtained by destructive distillation, with which we are all familiar.

A Test for Selenious Acid in Sulphuric Acid.—Ernst Schmidt, in Archiv der Pharmazie, June 27, 1914, describes the following test, for which he claims extraordinary delicacy: He uses 10 Cc. of the acid, and adds to it 0.01 Gm. of codeine phosphate. A bluish coloration results, changing to green. Other codeine salts, as well as morphine salts, produce the same effect.

Purification of Ammonium Salts.—Certain ammonium salts are known to contain impurities, which, in course of time, produce discoloration of these salts. The impurities are removed with great difficulty by ordinary recrystallization. If, however, the ammonium salts are subjected to heating, short of volatilization, the impurities become insoluble, and may be removed by dissolving the salt, filtering, and recrystallizing in the usual manner.—Hinselmann in a German publication, reported in *Chemical Abstracts,* January 10, 1916.

VOLUMETRIC ESTIMATION OF CALCIUM PHOSPHATE.

While acid sodium phosphate can easily be titrated with alkali and phenolphthalein, this method cannot be directly applied to acid calcium phosphate, $CaH_4(PO_4)_2$. When, however, the calcium phosphate is converted into sodium phosphate by means of sodium oxalate, a volumetric estimation of the phosphate is possible. Kolthoff (Pharm. Weekbl.) therefore recommends the following process: A weighed quantity of the calcium salt is dissolved in a small excess of hydrochloric acid, the solution transferred to a measuring flask, diluted with water, and neutralized with sodium hydroxide solution, using methyl orange as indicator. After water is added to the mark, there is added to an aliquot part of the liquid an excess of neutral sodium oxalate solution, and the mixture is titrated with tenth-normal sodium hydroxide solution, using phenolphthalein as indicator. Each cubic centimetre (mil) of sodium hydroxide solution corresponds to 7.1 milligrammes of P_2O_5.

PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

BALTIMORE.

The February meeting of the Baltimore Branch of the American Pharmaceutical Association was held in the Assembly Hall of Hynson, Westcott and Company's Pharmacy, Wednesday, February 16, 1916.

Mr. James A. Black informed the meeting of the death of Dr. Hynson's sister, and gave that as the reason for his absence from the meeting. He was questioned as to the advisability of adjourning the meeting out of respect and as an outward sign of sympathy with Dr. Hynson, but, after discussing the question for a while, it was thought best, in view of Dr. Hynson's broadmindedness, to continue the meeting. A resolution offered by Mr. Black was passed directing the secretary to write Dr. Hynson a letter of sympathy and condolence.

Two resignations from chairmanships of committees were considered and were held over till the next meeting, one consenting to hold his till then and the other waiting on a report from Dr. Hynson, who was endeavoring to get the consent of a desirable member for it.

The Branch approved the creation of a social committee, notice of which had been given at the January meeting, and Miss Annie M. Patterson was elected chairman, she preferring this title to that of chairwoman, as she considered the latter appellation sounded too much like charwoman. The pharmacisters were appointed as the other members.

A bill presented to the state legislature, prohibiting druggists from prescribing except in cases of great emergency, and hedging them about with onerous and humiliating restrictions, was discussed, and the secretary was instructed to write the Committee on Hygiene, to which the bill had been referred, voicing the Branch's disapproval of the bill, an action which the Retail Druggists' Association had already taken on the preceding Monday.

The prescription presented by Mr. Meyer at the November meeting and calling for: copaiba 4 drachms, balsam Peru 2 drachms, oil turpentine 2 drachms, and syrup lemon sufficient to make 6 ounces, in which the balsam Peru was the disturbing factor, was shown as a good emulsion, which was made by the addition of 2 drachms of sweet almond oil to the copaiba and oil turpentine; this was emulsified with 4 drachms acacia and 6 drachms water. The balsam Peru was added to this primary emulsion and thoroughly incorporated, adding finally the syrup lemon.

The secretary was directed to endeavor to arrange for a stereopticon lecture on vaccines and serums by Dr. Beavers to be held in conjunction with the Retail Druggists' Association and to take the place of the March meeting.

Mr. Meyer was requested to arrange with the Druggists' Association for the lecture which it was planned to give in its meeting-room in one of the downtown hotels.

The pharmacisters reviewed the journals and quite a few articles were considered and some discussed.

One of the articles considered stated that when tincture strophanthus is mixed with water hydrolysis takes place and a toxic compound is formed, therefore it was thought best that the tincture should not be prescribed in aqueous mixtures, but should be diluted just before administering it.

Tincture lavender compound was stated to be an excellent disguise for valerian, and oil lavender was mentioned as very good for removing the odor of valerian from mortars, especially of pills of the three

valerates. The oil was also recommended for masking the odor of cooking cabbage.

Sun-cholera mixture in which the tincture opium was replaced by tincture gambir compound was proposed as an efficient non-narcotic cholera mixture.

WM. J. LOWRY, JR., Secretary.

CHICAGO.

The Chicago Branch of the American Pharmaceutical Association celebrated its tenth anniversary Friday evening, February 18, at the Hotel LaSalle.

A large company of the members, many of them accompanied by their wives or friends, sat at table from 6.30 until 8.00 and enjoyed a fine repast. Among those present were Thomas Potts, secretary, N. A. R. D.; H. C. Christensen, secretary, N. A. B. P.; Jahn Chawtal, president, C. R. D. A.; Mrs. Forbrich, chairman, W. O. C. R. D. A.; John Blocki, secretary, C. V. D. A.; Leo Mrazek, president, Illinois Board of Pharmacy; P. A. Mandabach, secretary, N. A. D. C.; J. H. Beal, chairman, H. M. Whelpley, secretary, and F. W. Meissner, member of the Board of Trustees of the U. S. Pharmacopœia; W. B. Day, general secretary, A. Ph. A., and Hugh Craig, president, Chicago Branch, A. Ph. A.

After dinner the audience assembled in one of the large parlors, where Dr. H. M. Whelpley presented an illustrated lecture on "Some Historical Features of the American Pharmaceutical Association." The hundred pictures were very fine, many of them from snapshots taken by Dr. Whelpley during his attendance at the last thirty-three conventions of the Association. Many of the pictures had been colored by Mrs. Whelpley.

Dr. Whelpley showed pictures of nearly all of the ex-presidents of the Association, beginning with Daniel B. Smith, the first president, elected in 1852, and including William Procter, William J. M. Gordon, Frederick Stearns, Edward Parrish, E. H. Sargent, Enno Sander, A. E. Ebert, J. F. Hancock, C. Lewis Diehl, William Saunders, of London, Canada; P. W. Bedford, J. U. Lloyd, J. P. Remington, H. M. Whelpley, C. E. Dohme, A. B. Prescott, Oscar Oldberg, etc., and, of the honorary presidents, P. C. Candidus, S. A. D. Sheppard, Ewen McIntyre, and Henry Biroth.

There were shown also many very interesting incidents connected with some of these men. For instance, a file of prescriptions from William Procter's store, held by a long wire, on which prescriptions Nos. 1 to 3000 were impaled; also a number of photographs of individual prescriptions, showing the prices: one ounce tincture of digitalis, 6 cents; a six-ounce mixture, 23 cents; a dozen of pills, 12 cents, etc. There was exhibited a picture of Professor Hallberg in his home with his family, Mrs. Hallberg and his only son, Carl. Carl was present at the meeting—a tall, strapping fellow, just finishing his second year of a college course in engineering. There were a number of pictures of Dr. Beal and other famous pharmaceutical fishermen with their respective marvellous catches; also pictures of beautiful natural scenery caught on the various excursions and pleasure trips in connection with the conventions.

The lecture was very inspiring. Younger members of the Association, and older ones, too, expressed themselves as determined to put the Chicago Branch of the Association just where it belonged—at the forefront of the local pharmaceutical societies.

Announcement was made on the invitations that the Chicago Branch wants the parent Association to come to Chicago for its 1918 convention. This announcement created much enthusiasm, and plans are being laid to bring the convention here for that year.

E. N. GATHERCOAL, Secretary.

DENVER.

The February meeting of the Denver Branch of the American Pharmaceutical Association was held at the Adams Hotel, February 15. The usual dinner preceded the meeting. The following members were present: P. A. Chedister, E. L. Scholtz, John Dow, H. C. Watson, L. A. Jeancon, Charles J. Clayton, William Beukma, S. T. Kostitch, John A. Martin, F. W. Nitardy, A. Swoboda, R. H. McKinzie, V. Lagasse, John Best, A. L. Pillsbury, A. W. Clark, Mr. Neuburn, F. J. Lord, M. P. Given, W. T. Hover and W. A. Hover

After the reading and approval of the minutes, President Hover announced the appointment of the following committees:

Membership: Lincoln Wilson, chairman; R. G. Watson, Adolph Swoboda.

Program: F. W. Nitardy, chairman; C. D. Charles, M. M. Becker.

Education: H. C. Washburn, Charles J. Clayton, William Beukma.

Legislation: A. W. Clark, Hugh SeCheverall, E. L. Scholtz.

The question of Associate Membership was then brought up and, on motion by Mr. Clayton, it was decided to make provisions in the By-laws for this form of membership. Some discussion on the question took place, which was participated in by Messrs. Swoboda, Best, Clayton, Lord, McKinzie, Lagasse, Scholtz and Watson.

Mr. Clayton was appointed to draft a suitable amendment to be presented at the next meeting.

A resolution in reference to revoking the license of registered pharmacists for the violation of a prohibition law was then offered by the secretary. After some discussion and change in wording it was adopted in the following form:

"WHEREAS, Violations of the prohibition law by persons running or claiming to run drug stores cause public feeling and sentiment detrimental to the interest of pharmacy; and

"WHEREAS, All true pharmacists are desirous of complying with this law in letter and spirit; be it

"*Resolved,* by the Denver Branch of the American Pharmaceutical Association, That we recommend the revocation of the license of registration by the Board of Pharmacy in all cases where a person has been convicted the second time for the illegal sale of intoxicating liquors."

The secretary was instructed to forward a copy of this resolution to the secretary of the City Association, State Association, State Board of Pharmacy, County Medical Association, also to Governor Carlson, the Attorney-General, and give it out to the press.

It was then announced that the evening papers published a story of an arrest of a druggist for selling bathing alcohol, denatured according to the government formula. In the discussion which ensued the suggestion that a more careful labelling of this product and, possibly, a formula more desirable than the ones generally used now could be found. As brought out by President Hover in harmony with this suggestion it was decided to appoint a committee to frame a label for denatured alcohol to be used for bathing purposes, and investigate the formulas and report their findings at the earliest possible moment to the Executive Committee of the Branch. As it was thought advisable to take action on this matter before the next meeting, Mr. Hover thereupon appointed F. W. Nitardy, Charles J. Clayton and L. A. Jeancon to act in this capacity.

Mr. Clark stated that in a recent conversation with the internal revenue collector he had been told that any formula using denaturing agents in quantities not less than those specified by the government formula would be satisfactory to the Federal Government.

Some further discussion followed, and Mr. Hover suggested that the report of this committee could be printed and circularized by the jobbers of Denver and thereby receive wide publicity.

The question of how poisonous or injurious the denatured alcohol consisting of one part of formaldehyde in 250 parts of ethyl alcohol would be was discussed at some length.

The question of permanent quarters for the pharmaceutical interests of the city and state was then discussed by Messrs. Clark, Nitardy, Clayton, Scholtz, and others, but it was decided to postpone action until a future date.

The question of prescription profits was then taken up. President Hover, speaking of the discussion started by the investigation along this line carried on last summer for the State Association, and a report on the prescription department read at the convention of the National Association of Wholesale Druggists, and the wide publicity received by these reports in pharmaceutical journals and recently commented on in the lay press, stated that from the jobbers' viewpoint, it seemed that the prescription departments in stores doing a limited prescription business frequently represent an investment by no means justified by the returns of this department, and the advisability of such stores discontinuing their prescription service was suggested. Messrs. Clayton, Clark, Dow, Watson, Scholtz, and others, however, expressed themselves that any retailer, regardless of how small his profits may be from the prescription department, or even if he knew the same was an absolute loss to him, would not be willing to give up this department, because it constitutes what may be called the "life" of the drug business. Without it the place would no longer be a drug store.

After the close of the discussion on this subject, President Hover, in speaking of the price situation, read a series of prices on

familiar drugs prevailing in 1871, which in many instances were similar to, and higher than, the present high prices, commonly thought of as higher than any that have ever prevailed in the past. Mr. Hover suggested that this was an opportune time for retailers to raise their selling prices on various articles of drug-store merchandise, including proprietaries, on which prices to them had been raised; many things being sold at the present time without profit or at actual loss by retailers who are not watching their costs closely.

The question of prescription prices and rules for pricing prescriptions, average prices obtained and that would be obtained when certain rules would be followed, were discussed at considerable length, most of those present participating. The consensus of opinion seemed that the N. A. R. D. price schedule, if carefully followed, would yield a retail price on prescriptions which would mean a fair profit to the pharmacist and yield a better price than generally obtained in Denver at the present time. The rule of doubling the cost of ingredients and adding a compounding fee was also discussed and considered feasible, with a minimum scale for certain classes of prescriptions when using a smaller percentage of profit in figuring the price of very expensive prescriptions.

F. W. NITARDY, Secretary.

DETROIT.

The February meeting of the Detroit Branch of the American Pharmaceutical Association was held Friday evening, February 18, at the Wayne County Medical Society Building. President Scoville called the meeting to order.

Mr. Arthur L. Buzzell gave a talk on the requirements of the Harrison Anti-narcotic Law, explaining recent rulings made by the Department of the Interior. A very interesting discussion followed, which cleared up, in the minds of those present, many points not previously understood.

The next paper was by Mr. John H. Webster on the Stevens Price Maintenance Bill. After the reading of the paper a discussion followed, at the close of which the sense of the meeting was shown by a resolution, unanimously adopted, supporting the Stevens bill.

President Scoville offered the thanks of the meeting to the speakers.

A. A. WHEELER, Secretary.

NASHVILLE.

The regular monthly meeting of the Nashville Branch of the American Pharmaceutical Association was held on February 17, in the Music Room of the Nashville Y. M. C. A., in joint session with the Nashville Drug Club. Dr. J. O. Burge presided.

After the reading and approval of the minutes, the Committee on Nominations reported the following for officers of the ensuing year and they were elected: President, E. A. Ruddiman; vice-president, L. S. Pully; treasurer, C. C. Young, and secretary, William R. White. Dr. Ruddiman, however, could not accept the office of president on account of other duties, and Dr. J. O. Burge was unanimously elected in his stead.

Mr. J. E. Justice, of Clarksville, Tenn., a member of the State Board of Pharmacy, was then introduced and addressed the Branch on "Pharmaceutical Conditions." He laid special stress on the high price of drugs, and offered some helpful suggestions for educating the public on the cause of the present conditions.

A general discussion of the subject was participated in by the members, resulting in the appointment of a Joint Publicity Committee from the two associations. The purpose of the committee is to inform the public, through the press, of the unusual conditions which affect the prices of drugs and chemicals. D. S. Sanders and William R. White were named as members of the committee.

The subject of "Whether Picture-show Advertising Pays" was discussed by D. J. Kuhn, D. S. Sanders, J. B. Sands, and others. The question of whether prescriptions should be marked in the N. A. R. D. cost-mark or in plain figures in ink was then argued, both *pro* and *con*. A poll disclosed that the N. A. R. D. plan was generally adopted.

WILLIAM R. WHITE, Secretary.

NEW YORK.

The February meeting of the New York Branch of the American Pharmaceutical Association was called to order by President Lascoff, at 8.40 o'clock on the evening of the 14th.

Secretary Hostmann being absent, the Chair requested Frank L. McCartney to act in his stead.

The minutes of the January meeting were then read and approved.

The treasurer's report was read and accepted with thanks.

Dr. Anderson, chairman of the Committee on Education and Legislation, was absent, but Drs. Manfield and Weinstein reported on proposed state legislation.

No reports were made by the Committees on Progress of Pharmacy or Fraternal Relations, as Drs. Diekman and Diner were both absent.

Frank L. McCartney, chairman of the Membership Committee, reported the following applications for membership in the parent association: Franklin Black, 81 Maiden Lane, New York City; Dwight T. Scott, care of National Vaccine Company, Washington, D. C.; George Simon, 135 William Street, New York City; Harry A. Stebbins, 145 Front Street, New York City; Lawrence N. Upjohn, M.D., 48 Vesey Street, New York City; Edward Zink, 203 Fulton Street, New York City; Adolph Wolf Lerner, 556 Quincy Street, Brooklyn, N. Y.; Nestor Petillo, 57–59 Perry Street, New York City; N. C. Partos, 160 Second Avenue, New York City; Alirio Diaz Guerra, M.D., 29 Polhemus Place, Brooklyn, N. Y.; Chanon A. Bernstein, 3146 Broadway, New York City; Clarence E. Wright, 435 West 119th Street, New York City; Anthony Di Bella, 1431 Boscobel Avenue, New York City. And for membership in the New York Branch only: Charles W. Holzhauer, Broad and Market Streets, Newark, N. J.; Charles Holzhauer, Broad and Market Streets, Newark, N. J.

He then appointed the following committee to assist him in obtaining new members: H. V. Arny, Turner F. Currens, St. Claire Ransford Gay, Charles W. Holzhauer, Gustave Horstmann, Hugo Kantrowitz, Joseph L. Mayer, C. A. Mayo, Romaine Pierson, Otto Raubenheimer, George T. Riefflin, and Hugo H. Schaefer.

The speaker of the evening, Mrs. St. Claire Ransford Gay, was then introduced, and read a paper, entitled "X-ray Cases in Which Barium Sulphate is Contra-indicated."

A lengthy discussion followed, in which Drs. Mayer, Roon, Weinstein, and Schaefer participated.

Mrs. Gay was given a rising vote of thanks, the meeting then adjourning at 10.05 P.M.

FRANK L. MCCARTNEY, *Secretary Pro Tem.*

PHILADELPHIA.

The regular monthly meeting of the Philadelphia Branch of the American Pharmaceutical Association was held on Tuesday evening, February 8, 1916, at the Philadelphia College of Pharmacy.

In the absence of President Henry, Vice-President Sturmer called the meeting to order at 8.45 P.M.

The following committee has been appointed to help arrange entertainment for the A. Ph. A. members during the Atlantic City meeting: W. L. Cliffe, chairman; E. Fullerton Cook, C. Mahlon Kline, H. K. Mulford, F. M. Apple, and President Samuel C. Henry, *ex-officio*.

Under the head of new business, Mr. England moved that President Henry be empowered to appoint a nominating committee at his leisure and to instruct it to prepare a list of new officers to be balloted upon at the March meeting.

The motion was seconded and when put to vote, carried.

Mr. Cliffe moved that President Henry be instructed to appoint a committee, with power to act, to draw up a set of resolutions concerning the bill now before Congress in regard to the construction of a memorial to Professor Procter, and to forward them to the proper authorities at Washington. This motion was likewise seconded and passed.

Professor Remington then introduced Professor Eberle to the audience. He responded with remarks to the effect that he was becoming acclimated and that the work of the JOURNAL was progressing smoothly.

Mr. Hugo Kantrowitz, of the Apotheker Zeitung, of New York, was then introduced and stated that, although he was not a strong public speaker, he did have a very strong feeling of friendliness for the A. Ph. A. and for the Philadelphia Branch.

The evening's program was then taken up and Professor Sturmer presented "The Review of Current Pharmaceutical Literature." The author stated that, rather than review the pharmaceutical literature, which was undoubtedly read by most of those present, he had abstracted several articles from the chemical and foreign journals of pharmaceutical interest.

This paper was discussed by Charles H. La Wall, E. Fullerton Cook, F. Atlee Dean, and W. L. Cliffe.

Prof. Otto Raubenheimer, who was to come from Brooklyn to discuss "The Recipe Book of the A. Ph. A.," was delayed, and the

interval was utilized by Professor Remington in relating a few interesting incidents that occurred in some of the past meetings of the Deutscher Apotheker Verein of New York.

Professor Raubenheimer here entered with words of praise for the Reading trains which leave on the hour and arrive on the hour—sometimes.

In his address Professor Raubenheimer related numerous incidents from his own experiences, emphasizing the need of a reliable and comprehensive recipe book whose publication was authorized by the A. Ph. A. at the 1915 meeting, a standing committee of fifteen being appointed, with Professor Raubenheimer as chairman.

The idea of the committee is to divide the volume into several chapters, somewhat as follows: Chapter 1—Formulæ deleted from U. S. P. and N. F. Chapter 2—Formulæ from foreign pharmacopœias. Chapter 3—Hospital formulæ. Chapter 4—Formulæ named after their originators. Chapter 5—Reagents and stains. Chapter 6—Formulæ for toilet articles, cosmetics, perfumes, and dentifrices. Chapter 7—Technical formulæ — photographic — disinfectant—insecticidal. Chapter 8—Agricultural formulæ. Chapter 9—Veterinary formulæ. Chapter 10—Formulæ for beverages and syrups.

In conclusion Professor Raubeinheimer stated that the work was somewhat hampered by lack of funds, for as yet no appropriation had been made by the Council of the A. Ph. A. for stationery, binders, etc., and that as yet nothing had been definitely decided upon, but that he was almost ready to begin publishing formulæ in the JOURNAL for suggestions and criticisms.

DISCUSSION.

Professor Remington: "I believe that the scope of this work should be quite comprehensive, as the scope of a recipe book must needs be if it is to be of any practical use. The insertion of formulæ from foreign pharmacopœias is an excellent idea and will tend to greatly increase the utility of the work. I might suggest that Professor Eberle permanently set aside a page of the JOURNAL, under some such heading as 'Proposed Formulæ for the New Recipe Book,' and that the formulæ be thus published for criticism and correction. I would advise the committee to put forth every effort to get the original formula from its source, or as near the source as possible, as nearly every formula much in demand has a multitude of variations."

Professor Eberle: "I would think that lists of formulæ in demand in the different parts of the United States would make a valuable beginning for the work."

Professor Fischelis: "Such a list as Professor Eberle suggests could be obtained from the query editor of the various pharmaceutical journals. Although the book itself must be somewhat limited as to contents, I see no reason why the index should be so restricted. I believe that the value of the book would be greatly enhanced if the index were to be very complete, and, in cases where the formulæ were not published in the recipe book, to give references to the various journals and other publications where they could be found."

J. Atlee Dean: "If the work were to include formulæ for stains, I think it would be a step in the right direction if in place of specifying saturated solution of various materials, as is much in vogue in present-day formulæ, a definite amount of the material dissolved in a definite amount of solvent be called for."

Professor LaWall: "I think the committee will meet with hearty coöperation along the lines of criticism and experimentation when they begin to publish the proposed formulæ. Although not a member of the committee, I would be glad to render any experimental assistance that I might be called upon to perform, and I also believe that abundant financial assistance will be forthcoming as soon as the council gets the new N. F. published."

Mr. England: "I believe that the book should be comprehensive, but that it should not contain too many technical formulæ nor too much dead wood. Professor Eberle might be able to assist Professor Raubenheimer in mimeographing, etc., for the time being, and if Professor Raubenheimer asks the Council for a modest appropriation I am sure that it will be forthcoming."

Mr. Beringer: "The works of McEwan, Dietrich, and Hager should serve as valuable guides to the committee that has this work in charge. I would advise the committee, in selecting formulæ, to be particularly careful to avoid those protected by a United States patent."

Professor Cook: "As the committee consists of fifteen members, I would suggest that

each member try four formulæ each year, and thus the book could be compiled at the rate of sixty formulæ per year."

Professor Raubenheimer: "One of the most important things for the committee to decide is, shall the book be one such as I have outlined, or shall it be strictly pharmaceutical, containing galenical formulæ only? I am not satisfied with the present proposed name of the volume, and think that the 'A. Ph. A. Formulæ Book' would be more appropriate, but that question can rest until the Atlantic City meeting."

A vote of thanks was given Professor Raubenheimer, after which the meeting adjourned.

J. Ed. Brewer, Secretary.

SAN FRANCISCO.

The San Francisco Branch of the American Pharmaceutical Association met February 10, 1916, in the office of the Pacific Pharmacist. President J. L. Lengfeld presided.

The transaction of routine business was followed by an interesting discussion on liquid disinfectants. The particular preparation considered was the Hygienic Laboratory Pine-oil Disinfectant, as described by Albert F. Stevenson in the Public Health Reports of October, 1915. This disinfectant is prepared by heating a freshly-distilled pine oil, obtained as a by-product by the steam or solvent process from the manufacture of wood turpentine, with good, strained, North Carolina, Grade E rosin, and lastly adding a certain amount of solution of sodium hydroxide. The phenol coefficient claimed for this preparation is about 3.5.

Mr. C. W. Twining enlightened the members on the several points regarding the preparation and uses of the culture of *Bacillus bulgaricus*.

The old question of counter prescribing was brought up. Dr. A. S. Musante gave it as his opinion that the medical profession is only too anxious to help the true pharmacist, and would turn with disgust from the person who considered himself capable to diagnose and prescribe after a few years' study in pharmacy. The limits of the two professions were clearly defined.

Other topics discussed during the evening were antitetanic powder, electrargol, electrocuprol, and salol in soft capsules. The lateness of the hour made it necessary to postpone the demonstration of the filling of soft gelatine capsules to the March meeting. In addition to this, the many formulas for the preparation of Blaud powder and Vallet mass will be considered.

It is important that the members note the change in the meeting night from the second Tuesday to the second Thursday.

The Branch will meet again on March 9, 1916, at 8 o'clock, 723 Pacific Building.

Clarissa M. Roehr, Secretary.

CITY OF WASHINGTON.

The February meeting of the City of Washington Branch of the American Pharmaceutical Association was held at the National College of Pharmacy, Washington, Tuesday, February 23, 1916.

The subject of the evening was a talk on the increase of prices for drugs and chemicals, the cause and effects, together with the future prospects, by Mr. Wymond H. Bradbury, assisted by M. I. Wilbert.

Mr. Bradbury discussed the subject very fully and brought out many points of interest. He clearly showed that the first rise in prices of drugs and chemicals was due directly to the disturbance in Europe and the general opinion that the war would last but a year, the result being that when hostilities broke out large manufacturers at once purchased their supplies for a year. At the expiration of this time, when their stocks were running low, they went again into the market, buying heavily everything obtainable, with the effect that prices again soared, thus marking two separate and distinct, decided advances.

He further showed that by reason of the embargoes all drugs grown in the restricted districts were not obtainable; likewise this is true of chemicals made abroad, many of which have never been made in America. Imports are difficult; high insurance rates on cargoes and no available ships, with exports practically cut off and large demands from abroad, have assisted in the advance of domestic-made goods.

Many commodities are controlled by second hands, who are holding for large increases. The potassium situation is a serious one and may result in the replacing of all potassium salts with sodium. The large increase in price of bromides is due principally to the increased demand for bromine in the manu-

facture of gas bombs. Many chemicals as well as foreign-grown drugs are now unobtainable, or the price is prohibitive.

The increase in price of sulphuric acid, soda ash, and many other products has caused material increase in price of glassware and other manufactured products. He pointed out that 10 percent of the glycerin made in America was used by the DuPont Powder Works. At the present time American manufacturers are refusing to sell the product for dynamite manufacture. Zinc and copper and their salts have increased, owing to their use in war materials.

The probable future will be that the abnormal prices will drop, owing to increased growing and manufacturing by the countries now at war, but no such low prices as prevailed before the war can be expected for years. Many products, especially trademarked goods, will never return to their former basis. The general cut in price for these articles by the retail trade has shown the manufacturer that he can increase his price and still the public will obtain the goods at less than his advertised price, owing to the cut-rate evil.

He also pointed out the possibility of the placing of export duties on many products by foreign countries, and government control of many drugs, thereby maintaining higher prices than before the war. This is shown by the action of Mexico with reference to vanilla, and Great Britain with sandal and buchu.

He maintained that, while the retailer had been affected, he was not as seriously affected as the manufacturer and wholesaler.

The attendance at this meeting was larger than usual, and the paper was discussed at some length by those present. It was pointed out by Mr. Wilbert that we in America were much better off than many foreign countries where many articles were unobtainable or at prices much higher than in this country. He also showed that agents in this country of German houses were now making many of the products, and, while obtaining advanced prices, they, at the same time, are keeping the market for the German manufacturers so that when the war ends they will not have to reëstablish their business in this country.

He further pointed out that much more manufacturing would be carried on if the manufacturers were assured that they would receive some kind of protection. Politics here is playing an important part.

The condition now existing has resulted in the market being flooded with all kinds of fake goods, principally by peddlers who are working all kinds of schemes, so that it is dangerous to purchase any products from any but legitimate dealers unless every lot and package is carefully tested.

The Sheppard Prohibition Bill for the District of Columbia, now pending in Congress, was taken up and discussed fully. This bill prohibits absolutely the sale of pure grain alcohol in every way, even on physicians' prescriptions; prevents common carriers from bringing it or delivering it in the District of Columbia; restricts the sale to five wholesale dealers under strict supervision, and allows the purchase only for scientific purposes in quantities not to exceed five gallons; the Federal Government, colleges, hospitals, scientific and public institutions are not excepted in any way.

The Branch absolutely refused to enter into the prohibition question in any way, but took decided action with reference to the clauses pertaining to pure grain alcohol for scientific, medicinal, or mechanical purposes, and appointed a committee to draft proper memorials to be presented to Congress. Messrs. Fuller, Flemer, and Bradbury comprise the committee.

S. L. Hilton, Secretary.

COUNCIL BUSINESS

A. PH. A. COUNCIL LETTER NO. 13.

PHILADELPHIA, PA., December 16, 1915.

To the Members of the Council:

GENTLEMEN:

Motions No. 19 (*Executive Committee of the Council*), *No.* 20 (*On the Financial Affairs of the Association*), *No.* 25 (*Expunging Discussion on Discontinuance of Prof. C. Lewis Diehl as Reporter on the Progress of Pharmacy from Published Minutes in Journal*), *No.* 26 (*Expunging Discussion from Minutes Published in Journal on Financial Affairs of the Association*), *No.* 27 (*Election of Members; Applications Nos. 22 to 32 inclusive*), and *No.* 28 (*Approval of Budget of Appropriations for* 1916) have each received a majority of affirmative votes.

A protest has been received from H. P. Hynson on Motion No. 23 (Adoption of Substituted N. A. R. D. Resolutions) that it is out of order, as the subject of the motion has been already considered by the Council and disposed of under Motion No. 18 (Council Letter No. 8, p. 23). The protest was referred to Chairman Eberle, who decides that:

"Motion No. 23 is in order. The Council referred or committed Motion No. 18 (N. A. R. D. Resolutions). Mr Freericks comes with resolutions of his motion for action by the Council; namely, to adopt or reject or instruct a committee in the performance of work committed to them. After a careful study I hold that Mr. Hynson's reference does not govern the question involved."

The following communication has been received from Frank H. Freericks (December 9):

"With reference to Council Letter No. 12 and copy of communication from Professor Remington, I beg you to send to Council members the following comments from me, no matter what circumstances may arise:

"May I submit with the best of good-will to all concerned that Professor Scoville was without authority to ask Professor Remington to state to Council the reasons for deleting whisky and brandy. In a matter under consideration by the Council its members are entitled to come to a conclusion without the pressure of outside influence. If any member of Council may take it upon himself to ask expressions of opinion, explanation, or information from outside sources, which are to influence the opinion of the Council members in reaching a decision on any question before it, then some of the parties concerned are invariably subjected to a disadvantage. If light from those who are not members of the Council was deemed necessary, it should have been requested by action of the Council itself in the regular manner. I do not for a moment deny the helpfulness and value of any opinion which we may be able to secure from Professor Remington, but, since the matter involves a question which I submitted to Council for its action, I am somewhat weighed down with the rather unequal task thus imposed upon me, granting, of course, that at any and all times the Council can extend the privileges of the floor to those who are not members. In my judgment, no person living has better right to be heard or to express opinion in any matter concerning the American Pharmaceutical Association than has Professor Remington, regardless of where such matters may be under consideration, but it is clear to me that, in this instance, Professor Remington would not have expressed an opinion and would not have entered into explanation had he not been requested to do so.

"The matter discussed by Professor Remington is now before Council on my motion. His criticism applies with its fullest force to me, though I do not believe that he knew such to be the case, and this only emphasizes the unfairness of calling for expressions from those who are not possessed of all of the facts.

"I do not undertake to speak for any one but myself, and do not claim to know the reason, or lack of reason, which may have prompted the third resolution of the N. A. R. D., to which Professor Remington refers, but I do know the reasons which prompted me to offer said resolutions for adoption by Council as coming from me, and my reason was plainly stated when I undertook to offer it. It was offered without vindictiveness; not in the heat of argument, and plainly negatives, without even the slightest hint, any moral

turpitude. In a word, the 'rumors' referred to were plainly stated to be that the Revision Committee had decided upon a deletion of brandy and whisky in order to serve the cause of Prohibition. I said then, and I say even more emphatically now, that the Revision Committee and the pharmacists of the country represented by it cannot in self-respect allow it to be publicly understood that brandy and whisky were deleted from the Pharmacopœia to further and serve the cause of Prohibition. If such inference may be drawn from statements made by any member of the Revision Committee, then those who are responsible for the Pharmacopœia owe it to themselves and owe it to pharmacy and medicine to make publicly known that such has not been the reason. In order that there may be no question about the existence of such 'rumors,' and in order that I cannot possibly be misunderstood as to the rumors referred to by me, I would say that some day in June, evidently while Dr. Wiley was passing through Cincinnati, he was interviewed by the Cincinnati Post, and there appeared in it as coming from Dr. Wiley a statement to the effect that the deletion of brandy and whisky had been decided upon because there was no legitimate use for them in medicine, and the impression was plainly conveyed that such deletion was another victory for Prohibition. I have tried to find the article in question, but to this moment have not succeeded, though I have no doubt about my recollection with reference to it. The article must have appeared in the Cincinnati paper during the middle of June, and very shortly after deletion had been decided upon by the Revision Committee. Again, under date of July 10, in the Chicago Tribune, Dr. Wiley was quoted as seeking 'Revenue Bureau confirmation for an assertion that druggists would have to take out a saloon license if they would dispense brandy or whisky, *for it could not longer be sold as a medicine.*'

"Now, as to the reasons which Professor Remington gives as having prompted deletion: It has always been my understanding that President Taft, either with or without authority, as the case may be, undertook to promulgate a standard for whisky on the ground primarily that whisky was not only a drug and medicine, but that its use was even more general as a beverage. Either by expression or by inference, he made plain that this decision was concerned with whisky as a beverage. Plainly he did not mean to change the standard, and did not change the standard, and would be altogether without authority to change the standard for whisky when sold as a drug or for pharmaceutical purposes. Plainly the standard laid down in the Pharmacopœia is not null and void, but there has been added another standard which is to govern when whisky is sold as a beverage. Any pharmacist who dispenses or uses pharmaceutically the brandy or whisky of U. S. P. standard will always be protected and found to be within the law. The standard as decided upon by President Taft for whisky as a beverage has even no necessary force for that purpose in the several states, and the several states may and have adhered to the U. S. P. standard. In Prohibition states, where brandy and whisky may not be manufactured and sold as a beverage, and where it may be sold only as a drug and used pharmaceutically, it is not possible to have a standard other than that laid down in the Pharmacopœia, and it is particularly in those states where a standard is necessary.

"Assuming, however, that the reasons which are stated to have prompted the Revision Committee control to the fullest extent, it cannot be denied that there are a number of ways open to the Revision Committee and to the National Formulary Committee for deciding upon standards which will and must invariably be recognized when the articles in question are to be used medicinally or pharmaceutically, and that is the only concern to pharmacists as such. If but one standard is desirable, it can be stated in connection therewith that it is the standard for brandy or for whisky respectively when sold as a drug or used pharmaceutically, or some word can be added to the title indicating medicinal or pharmaceutical use, so that when sold under such titles the standard laid down will apply.

"In this connection I do not assume to give advice, but would point out only that every objection which has been raised can be reasonably met. The fact remains that a majority of the Revision Committee favor the inclusion of brandy and whisky; that only on the ground of disagreement as to standard was deletion decided upon by a bare majority, and plainly under some misapprehension of facts; that in truth and for all practical purposes it will not be more difficult to decide upon a standard than it is with reference to

a standard for any other article regarding which there may be difference of opinion; and, finally, it is plainly evident that a vast number of pharmacists throughout the country believe that the Pharmacopœia, or, if not it, then the National Formulary, should contain a standard for said articles.

"In conclusion, I submit for consideration to members of the Council that no one can have greater respect and higher regard and esteem for Professor Remington than I have, but this communication plainly evidences that he was asked to express an opinion without having presented to him all of the facts. His criticism is plainly directed toward a condition which does not in the least apply with reference to my motion in offering the resolutions for adoption, and, therefore, I do hope and trust that you will not be controlled by his indirect request to vote against the motion which I have submitted.

"This is not a question of men or their relative merits; it is purely and alone a question of principle. Upon its proper decision rests the possible contingency of having the Pharmacopœia regarded as a work subject to the whim and petty prejudices of some, or of having it regarded by the public as a book of light, sanity and truth, pharmaceutically speaking."

The following communication has been received from George M. Beringer (December 13):

"As a member of the Committee of Revision of the U. S. P. to whom was referred the duty of preparing the monographs for whisky and brandy, I have heretofore refrained from public discussion of the pharmacopœial standards for these or the reasons for the deletion of these titles. Since it appears that the Council of the American Pharmaceutical Association is to become the forum for the discussion of these questions and for the presentation of statements, it now becomes my duty to plainly present certain facts so that the judgment of the Council may not be perverted or misleading, and *ex parte* statements be published in the records of the American Pharmaceutical Association as expressing its opinion.

"The communication from Prof. Joseph P. Remington in Council Letter No. 12, despite its form and appearance on pharmacopœial stationery, must be accepted only as his personal opinion. The Committee on National Formulary had no authority to request such a statement. I have no knowledge of such a request coming before the Executive Committee or the General Committee of Revision of the U. S. P., and if not authorized by these or by the Board of Trustees of the U. S. P., it must be viewed as a personal and not as an official statement from the Revision Committee.

"The Committee on National Formulary is justified in explaining why these titles should not be included in the standards of the Formulary, and an intelligible statement of this character is certainly within their authority and ability.

"The statement that the present U. S. P. standards declare for straight whisky is on a par with another published statement purporting to come from the same source, that any doctor can get pure whisky by 'simply ordering Spiritus Frumenti, Eighth Revision.' The referee's report unmistakably pointed out to the members of the Revision Committee that the tests laid down in the U. S. P. VIII were very faulty, and especially that the tests for total solids and the solubility of the residue would permit the use of factitious and grossly-adulterated whiskies; and these are not the only points criticised.

"The Pharmacopœia should not become entangled in the trade controversies over whisky as a beverage, and in every way possible the referee has endeavored to avoid this. The duty of the Pharmacopœia is to define, describe, and supply tests for properly-produced whisky that may be dispensed for medicinal purposes. The report of the referee was unanimously adopted by the Subcommittee on Spirits, Liquors, and Waters, and was substantially correct and undoubtedly would have accomplished this purpose. The elimination of a proper pharmacopœial standard now leaves the quality of the whisky entirely to the judgment of the dispenser.

"The late Solicitor-General Lloyd W. Bowers was forced to conclude that the 'term whisky as a drug is not applicable to a different *product* than whisky as a beverage' (italics mine). However, he properly pointed out that the Pharmacopœia has the making of 'the particular requirements,' 'the points of distinction between superior and inferior whiskies,' 'the prescribing of tests of excellence.' This is the proper function of the Pharmacopœia, and is exactly what the Pharmacopœia has always done and continues to do in defining standards for numerous

articles. For example, the standards in the Pharmacopœia for sulphuric acid and sodium carbonate are for those grades of these products suitable for medical purposes, and the Pharmacopœia does not attempt to fix standards for the technical grades of oil of vitriol and sal soda used in numerous industries. The same principle holds and should have been applied to whisky and brandy, and the definition, description, and tests laid down should be for those types or grades of these products suitable for medical purposes.

"It was the misfortune of the Pharmacopœia that several of the members of the Committee of Revision had been witnesses in the hearing before the Government officials to determine the standards for whisky as a beverage. They approached the pharmacopœial discussion from the viewpoint of the partisan in this trade controversy, and their efforts were directed to have the Pharmacopœia in this revision nullify the decision of President Taft and formulate a standard that would cover whisky as a beverage. Power and influence were exerted in no uncertain way to attain the end they desired and to sway the judgment of the committee and to control its vote.

"Before the referee had submitted any report to the Sub-committee, the General Committee received a circular in which President Taft's decision and actions were criticised. Further, this too evident intent was shown in a monograph prepared without reference to the referee and attempted to be put through over his head. In this draft the initial sentence defined whisky as 'The *alcoholic beverage* obtained by the distillation of the mash of *fermented grains*' (I am responsible for the italics, but not for the erroneous language). The description started out: '*A beverage* having, etc.' The referee declined to be merely a figure-head, and, in the discharge of this duty, refused to accept the texts for these as prepared in advance and submitted, without his knowledge, to the chairman of the sub-committee for approval and passage.

"To every one of the numerous assignments in the U. S. P. revision that has fallen to my lot to consider I have given careful study and made a report. Why the same consideration, fair treatment, and discussion that accompanied the other topics did not hold in the matter of whisky and brandy is a question. I fear this was due to the prejudgment and bias of some of the members.

"I have no desire to engage in any controversy on this subject, but the plain, uncontroverted facts should be understood by every member of the Council, and the responsibility for the failure of the Pharmacopœia to discharge a duty that it had accepted and voted to discharge and had assigned to be discharged should be fixed. Further, permit me to state that I cannot approve of the language of the resolution offered by Mr. Freericks."

J. W. ENGLAND,
Secretary of the Council.

415 N. 33rd St., Philadelphia, Pa.

A. PH. A. COUNCIL LETTER NO. 14.

PHILADELPHIA, PA., December 20, 1915.

To the Members of the Council:

GENTLEMEN:

The following communication (December 18) has been received from Frank H. Freericks:

"In keeping with my telegram this morning, I now move, as substitute for Motion No. 23, the adoption of the following resolutions:

"'*Resolved*, That we respectfully request the Revision Committee of the Pharmacopœia to reconsider its action in deciding upon the deletion of brandy and whisky from the new Pharmacopœia, and urge it to include therein suitable monographs for both.

"'*Resolved*, That this request be made known also to the Board of Trustees of the United States Pharmacopœia and to the Revision Committee of the National Formulary.

"'*Resolved*, That the Revision Committee of the National Formulary be requested to defer action on the communication heretofore referred to it concerning this matter, pending word of possible reconsideration and favorable action by the Pharmacopœial Revision Committee, and that in the absence of such favorable action it be understood as the sense of the Council that suitable monographs for brandy and whisky ought to be included in the new revision of the National Formulary.

"'*Resolved*, That the National Formulary Committee be requested to include in the National Formulary at least two formulas for denatured alcohol best suited for external application, which said formulas either have or may find the approval of the Internal

Revenue Department in exempting denatured alcohol, prepared in keeping with them, from taxation.'

"The above substitute motion is offered upon further reflection with a view of avoiding friction, and also with a view to avoid the beclouding of the important subject-matter with subsidiary questions not necessary for consideration in connection therewith."

The above motion is seconded by C. T. P. Fennel. It will be regarded as *Motion No.* 29 (*Substitute Motion for Motion No.* 23).

J. W. ENGLAND,
Secretary of the Council.
415 N. 33rd St., Philadelphia Pa.

A. PH. A. COUNCIL LETTER NO. 15.

PHILADELPHIA, PA., December 24, 1915.

To the Members of the Council:

GENTLEMEN:

A telegram has just been received from Frank H. Freericks withdrawing last resolution of *Motion No.* 29 (*Substitute Motion for Motion No.* 23), regarding inclusion of formulas in the N. F. (IV) for denatured alcohol for external application, leaving the other three resolutions unchanged.

The resolutions will then read:

"*Resolved,* That we respectfully request the Revision Committee of the Pharmacopœia to reconsider its action in deciding upon the deletion of brandy and whisky from the new Pharmacopœia, and urge it to include therein suitable monographs for both.

"*Resolved,* That this request be made known also to the Board of Trustees of the United States Pharmacopœia and to the Revision Committee of the National Formulary.

"*Resolved,* That the Revision Committee of the National Formulary be requested to defer action on the communication heretofore referred to it concerning this matter, pending word of possible reconsideration and favorable action by the Pharmacopœial Revision Committee, and that in the absence of such favorable action it be understood as the sense of the Council that suitable monographs for brandy and whisky ought to be included in the new revision of the National Formulary."

In order to simplify the voting, the above will be regarded as *Motion No.* 30 (*Substitute Motion for Motion No.* 23).

Motion No. 29 having been withdrawn, no vote will be taken upon it.

J. W. ENGLAND,
Secretary of the Council.
415 N. 33rd St., Philadelphia, Pa.

A. PH. A. COUNCIL LETTER NO. 16.

PHILADELPHIA, PA., January 7, 1916.

To the Members of the Council:

GENTLEMEN:

Motion No. 30 (*Substitute Motion for Motion No.* 23) has failed to receive a majority of affirmative votes, the vote having been 12 for the adoption of the motion and 16 against.

Motion No. 29 was substituted for Motion No. 23 in Council Letter No. 14 but withdrawn in Council Letter No. 15, and Motion No. 30 was then substituted for Motion No. 23.

Motion No. 31 (*Election of Members*). You are requested to vote on the following applications for membership:

No. 33. Charles Herbert Owen, U. S. Navy Aero Station, Pensacola, Fla., rec. by J. H. Rupert and W. B. Day.

No. 34. Charles Earle Delhotal, Attica, Kan., rec. by L. D. Havenhill and G. N. Watson.

No. 35. John W Akers, Jr., Mill Creek, Okla., rec. by E. G. Eberle and W. B. Day.

No. 36. Frank Y. Thedick, Lincoln and Colfax Sts., Denver, Col., rec. by Samuel T. Hensel and W. T. Hover.

No. 37. Charles MacGregor, 715 Washington Ave., Detroit, Minn., rec. by E. L. Newcomb and W. B. Day.

No 38. Harley R. Monroe, Tampa, Fla., rec. by G. D. Timmons and W. B. Day.

No. 39. Frank William Anderson, 1700 Coma Ave., S. E., Minneapolis, Minn., rec. by E. L. Newcomb and W. B. Day.

No. 40. Fred George Kiburtz, 32 Adams Ave., W., Detroit, Mich., rec. by Leonard A. Seltzer and A. A. Wheeler.

No. 41. Max Johnson, 32 Adams Ave., W., Detroit, Mich., rec. by Leonard A. Seltzer and A. A. Wheeler.

No. 42. Clarence A. Peat, 32 Adams Ave., W., Detroit, Mich., rec. by Leonard A. Seltzer and A. A. Wheeler.

No. 43. Raleigh E. Balger, care of Haddens' Pharmacy, Alta, Iowa, rec. by E. O. Kagy and W. B. Day.

No. 44. Clare A. Wilson, care of Ahrens Drug Co., Bedford, Iowa, rec. by E. O. Kagy and W. B. Day.

No. 45. Arthur C. Heidenreich, care of Olsens Drug Store, Des Moines, Iowa, rec. by E. O. Kagy and W. B. Day.

No. 46. E. Orville Gross, care of Miller Drug Co., Albia, Iowa, rec. by E. O. Kagy and W. B. Day.

No. 47. Plumer L. Egert, Iowa City, Iowa, rec. by E. O. Kagy and W. B. Day.

No. 48. James Weyrauch, 534 West Eighteenth St., Chicago, Ill., rec. by Leo L. Mrazek and William B. Day.

No. 49. Henry Fisher, M.D., 2345 East Dauphin St., Philadelphia, Pa., rec. by John R. Minehart and J. W. England.

No. 50. Melvin Carr Eaton, 333 North Broad St., Norwich, N. Y., rec. by Richard C. Stofer and J. Fred Windolph.

No. 51. Anton J. Schwarz, 3716 Densmore Ave., Seattle, Wash., rec. by A. W. Linton and Forest J. Goodrich.

No. 52. Emma Grace Lotz, Phar.D., 2135 Mt. Holly St., Baltimore, Md., rec. by Chas. Caspari, Jr., and Henry P. Hynson.

No. 53. Truman Smith, 1139 34th Ave., care of Madrona Pharmacy, Seattle, Wash., rec. by A. W. Linton and J. C. Palmer.

No. 54. David J. Gleason, United States Marine Hospital, Stapleton, N. Y., rec. by William L. Stearns and Dr. H. M. Whelpley.

No. 55. Eugen Friedmann, M.D., 65 Oak Grove, Minneapolis, Minn., rec. by Gustav Bachman and E. L. Newcomb.

J. W. ENGLAND,
Secretary of the Council.

415 N. 33rd St., Philadelphia, Pa.

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.

Committee on Publication: J. W. ENGLAND, *Chairman;* G. M. BERINGER, E. FULLERTON COOK, H. B. MASON, F. J. WULLING, and the Editor-in-Chief of the Journal, General Secretary, Treasurer and Reporter on the Progress of Pharmacy, *ex-officio.*

Office of Publication, 253 Bourse Building, Philadelphia, Pa.

THE WILLIAM PROCTER, JR., MONUMENT.

There has been some progress with the bill presented by Congressman J. Charles Linthicum, of Maryland, which contemplates that permission be granted for the erection of the William Procter, Jr., monument in the Smithsonian Institution grounds at Washington. The bill also provides for a contribution of $2000 by the Government for the erection of the base and pedestal.

The hearing before the Committee on the Library has been printed, and the next important step is to have the bill favorably reported. Your influence with a member of the committee may mean success; indifference will undoubtedly not be effective.

No persuasion is desired other than a presentation of the worthy object in which all American pharmacists are interested. It is now more a question of pharmacists exhibiting their faith in the mission of pharmacy.

Honorable James L. Slayden, of Texas, is chairman of the Committee on the Library; the other members are: Congressman Frank H. Clark, of Florida; William B. McKinley, of Illinois; Thomas G. Patten, of New York, and Edward W. Gray, of New Jersey.

Following a report of the committee, final action is taken in Congress, therefore your representatives in the Senate and House have a part in the consummation of our desire. They should know your wishes and be informed as to why they should cast a favorable vote.

USE THE LEGEND—"MEMBER OF THE A. PH. A."

J. O. Burge, writing to the Druggists' Circular, says: "Do you know, I think the members of the American Pharmaceutical Association do not seem to be as proud of their membership in that organization as they should be? That is the greatest body of scientific pharmacists in the world, and it should be considered a great honor to be enrolled with the leaders of our profession. If the members would use the legend '*Member of the A. Ph. A.*' on their prescription blanks, bill-heads, letter-heads, business cards, and, in fact, everywhere it could *appropriately* be used, and stand before their customers for what the A. Ph. A. stands for before the world, then we should not have to beg so hard to get new members in, nor wrestle so hard afterwards to keep them in. Let the 'dear public' know what the 'entitlements' Ph.G. and A. Ph. A. stand for, and it would soon begin to sit up and take notice as to 'who's who' in pharmacy. Don't you think it would be a good move?"

The Editor of the Druggists' Circular answers, "We do."

COÖPERATION ESSENTIAL FOR DYE INDUSTRY.

Salut Public, Lyons, France, in a recent issue printed an article by M. André Vinci on the French dye shortage. The author contends that if France desires to build up the dye industry numerous competent chemists must be trained for the work; corporations must be encouraged; the patent laws must be reformed, so as to favor French dye-makers; extraction and distillation of coal tar and manufacture of intermediates must be developed.

The situation in France is very similar to that in the United States, and Textiles presents it in this way:

"*First.*—Public laboring under illusions and ignorant of what is necessary to establish a dyestuff industry.

"*Second.*—The few existing establishments are merely assembling plants dependent on Germany for a supply of intermediates.

"*Third.*—Strong popular prejudice against combinations of corporations to control any industry.

"*Fourth.*—Insufficient and ill-balanced tariff on intermediates and dyestuffs.

"*Fifth.*—Lack of an effective working clause in the patent law.

"*Sixth.*—Lacked of trained chemists.

"*Seventh.*—Lack of efficient coöperation between the Government, industry and technical schools.

"*Eighth.*—A nearly complete dependence on the German dyestuff industry."

JAPAN ENCOURAGES MAKING OF DYES AND MEDICINES.

The Japanese Government provides a subsidy for Japanese corporations engaging in the manufacture of dyes, chemicals, and explosives. The Government retains supervision and places certain restrictions; if these are complied with, financial aid is given so as to pay the stockholders an annual dividend of eight percent.

Under dyes, the manufacture of coal-tar intermediates and synthetic colors is included. The medicines designated are: acetanilide, benzoic acid, carbolic acid, salicylic acid, antipyrin, bromine, chloral hydrate, potassium carbonate, creosote, alkaloids, and chemical derivatives and compounds of these. Carbolic acid and glycerin come under the provision for explosives; other chemicals and perfumes, when manufactured from by-products of the industries named, are further provided for.

The majority of stockholders in these corporations must be Japanese citizens, and the minimum capitalization is fixed by regulation of law. That this coöperative interest is encouraging Japanese investors is evidenced by a report that the stock for a company, providing for a $4,000,000 capitalization was oversubscribed 870 times. This reads like an exaggerated statement, but it is taken from the Tokio Asashē Shimbum. Our reference is the Commerce Report of March 3, 1916.

THE NUMBER OF DRUG STORES IN UNITED STATES.

According to the directory issued by the Pharmaceutical Era, there are 46,561 drug stores in the United States. There are 280 jobbing houses, including 12 that are owned by retail druggists on a coöperative plan. The number of physicians has been estimated at 150,000. The following deductions may be made: There are 2000 inhabitants for every drug store, 165 drug stores for every jobbing house, three physicians for every drug store.

PERSONAL AND NEWS ITEMS.

Dr. John H. Dawson, who contributed largely to the success of the San Francisco meeting, has been a member of the American Pharmaceutical Association for thirty-four years. He has held the position of examiner of medicines and of chemist in the United States appraisers' stores at San Francisco for twenty years. The members will regret to learn that the office Doctor Dawson filled so efficiently for many years has been abolished.

Professor Jeannot Hostmann has assumed editorial management of the C. U. C. P. Alumni Journal, and this publication exhibits the energy of the editor and promises to become more useful than ever.

Edward Plaut, of New York, has presented $5000 to Princeton University for the establishment of the Albert Plaut Memorial Library of Chemistry in memory of his father —an act worthy of emulation by others.

Dean Theodore J. Bradley, of the Massachusetts College of Pharmacy, in an address on "Professional Opportunities for Women," in Perkins Hall, Boston, stated that pharmacy offered excellent opportunities for women and that they were well fitted for such work.

Prof. A. G. DuMez, who organized the pharmacy department at the University of the Philippines, Manila, has returned to the United States.

Benjamin T. Fairchild, president of Fairchild Brothers & Foster, of New York City, is receiving congratulations from his numerous business associates and friends on his marriage to Mrs. Helena Rutherford, widow of Alfred Ely and only daughter of the late John Rutherford and Charlotte Livingston Rutherford, of New Jersey.

Prof. R. P. Fischelis, for some time assistant editor of the Druggists' Circular, is now connected with the publicity department of H. K. Mulford Company.

The Proceedings of the Missouri Pharmaceutical Association indicate that members of the American Pharmaceutical Association retain an interest in their state association. Thus the roster shows, aside from our worthy Treasurer, who has been secretary for many

years, that Leo Suppan is historian; Jesse E. Koppenbrink, president; H. D. Llewellyn, vice-president; William Mittelbach has been treasurer for twenty-five years; Glenn A. Burkhart is assistant secretary; O. J. Cloughly is chairman of the Council, and C. V. Whitney has been secretary of the Council for many years.

William O. Richtmann has resigned the position of resident manager of the Satsuma Camphor Company, Florida, and accepted a temporary position with the Wisconsin Pharmaceutical Experiment Station.

A Branch of the American Pharmaceutical Association is contemplated for Montana. Alexander Peterson, Charles P. Valentine, and Professor Mollet are encouraging the organization.

Dr. William Jay Schieffelin has been chosen permanent New York state chairman of the League to Enforce Peace.

William L. DuBois, of Catskill, N. Y., has received his certificate of life-membership in the American Pharmaceutical Association. His application was endorsed by Prof. P. W. Bedford thirty-seven years ago.

Mrs. Nora Dohme, widow of William F. Dohme, who passed away three years ago, died at the home of her son, Justus Dohme, of Baltimore.

Mrs. Burd MacFarlane Huhn, wife of Charles H. Huhn, died at her home in Minneapolis, February 27.

From the report of the Baltimore Branch we learn of the death of a sister of Prof. H. P. Hynson.

The JOURNAL offers condolences to the bereaved.

OBITUARY

Dr. William L. Rodman, president of the American Medical Association, died at his home in Philadelphia, March 8.

Dr. Rodman was born in Frankfort, Ky., in 1858, the son of General John Rodman, who for many years was Attorney-General of that state. He took his M.A. and then began the study of medicine with an uncle and cousin, later coming to Philadelphia and receiving his diploma from Jefferson Medical College.

Then he served a year's interneship at Jefferson, leaving there to serve two years in the U. S. Army Medical Corps at Fort Sill, in the then Indian Territory.

After that he married, his bride being the daughter of Dr. J. Q. A. Stewart, a noted alienist and an ex-president of the Kentucky Medical Society.

Two years of practice in Abilene, Tex., followed, and then he went to the University of Louisville to be a demonstrator in surgery. In 1898 he took the professorship in surgery at the Kentucky School of Medicine; resigning that, he came to Philadelphia, where he accepted the Chair of Surgery in the Medico-Chirurgical College.

The numerous honors which the research work and his position in the profession brought to Doctor Rodman were worn modestly. He was much sought after as a speaker, and his address in 1904, before the British Medical Association, on cancer of the breast, attracted world-wide attention in the medical profession. He was the author of several books and monographs.

Dr. Rodman is survived by his widow and three children, Dr. J. S. Rodman, Miss Virginia Rodman, and Mrs. Lincoln Godfrey, Jr.

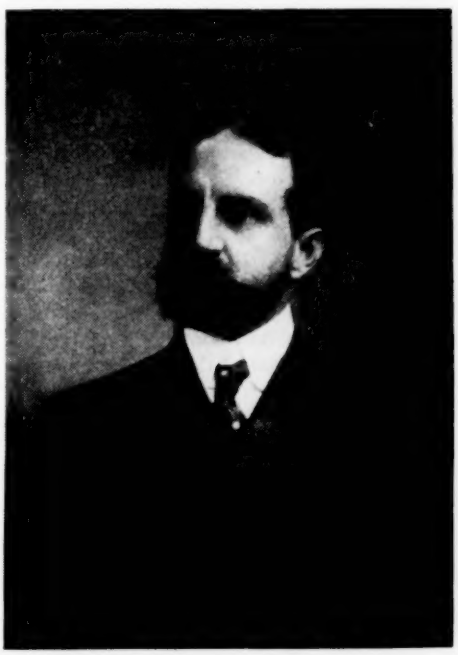

Photo by Gutekunst

DR. WM. L. RODMAN

SOCIETIES AND COLLEGES

LIST OF APPOINTMENTS TO THE SEVERAL COMMITTEES OF THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES.

1. Committee on Higher Educational Standards, to work with similar committees from the A. Ph. A., N. A. B. P., N. A. R. D., and State Associations: R. A. Lyman, J. T. McGill, and C. H. LaWall.

2. Committee on Federation of all Pharmaceutical Associations: H. P. Hynson, R. A. Kuever, and William C. Anderson.

3. Committee to Study the Advisability of Establishing Two Classes of Conference Membership: H. H. Rusby, J. A. Koch, and H. M. Whelpley.

4. Committee to Decide Whether Conference Remains a Conference or an Association of Administrative Officers: Joseph P. Remington, H. P. Hynson, and Edward Kremers.

5. Committee on Faculties (Classification of Teaching Staffs): J. O. Schlotterbeck, George C. Diekman, and C. M. Snow.

6. Committee on Uniformity of Student Records, such as Matriculation Blanks, Advanced Standing, Cards, etc.: E. L. Newcomb, W. C. Alpers, and C. B. Jordan.

7. Committee on Curriculum: Theo. J. Bradley, George B. Kauffman, and C. Caspari.

8. Committee on Alumni: H. M. Whelpley, J. W. Sturmer, and A. B. Huested.

9. Committee on Relation of Pharmacy Colleges with Other Professional Schools: George C. Diekman, G. W. Stevens, and A. W. Linton.

10. Committee on Relation of the Colleges with Boards: W. G. Gregory, W. C. Alpers, and Philip Asher.

11. Committee on Uniform College Bulletins: Philip Asher, C. A. Dye, and L. D. Havenhill.

12. Joint Committee on Pre-requisite Arguments: W. B. Day, E. A. Ruddiman, and J. O. Schlotterbeck.

13. Joint Committee on Definition of a Proprietary Medicine: J. H. Beal, L. E. Sayre, and Charles Caspari, Jr.

14. Joint Committee on Relations of Medicine and Pharmacy: J. H. Long, A. B. Huested, and R. L. Green.

15. Committee on Teaching Methods: E. H. La Pierre, H. H. Rusby, and A. Bolenbaugh.

16. Committee on Joint Examination Questions (engaged): Henry Kraemer, C. B. Jordan, H. P. Hynson, William C. Anderson, E. O. Kagy, and C. A. Dye.

17. Committee on the Salaries of Teachers in Colleges of Pharmacy: H. H. Rusby, C. W. Patterson, and G. W. Stevens.

The College of Pharmacy of Corvallis, Oregon, has been elected to membership.

WILBER J. TEETERS, Secretary.

The American Conference of Pharmaceutical Faculties and National Association of Boards of Pharmacy will likely meet in *joint session* in Philadelphia, Saturday, September 2. The separate session of the National Association of Pharmacy will probably convene in Philadelphia, Thursday, August 31, and September 1. Official notice will be given in next issue.

MINNESOTA PHARMACEUTICAL ASSOCIATION.

The adoption of a code of ethics and the emphasis given to the need of higher educational requirements on the part of pharmacists were among the features of the meeting of the Minnesota Pharmaceutical Association held in Minneapolis on February 10. The total attendance numbered 639; the present membership is 807—a remarkable showing of interest.

The treasurer's report showed that the finances of the association are in better shape than at any time in its previous history. The chairman of the Publicity Committee stated that about 8000 bulletins had been issued to members during the year, and recommended that at least 250 articles suitable for publication in daily papers be sent out each month by the Association. This recommendation was adopted.

At the meeting of the Commercial, Scientific, and Practical Sections of the Association various papers and addresses were presented. Among those taking part were Max Menzel, of Pipestone, who spoke on the "Buying of Drugs, Chemicals and Pharmaceutical Preparations"; Dean Wulling on the "Danger of Wood Naphtha"; Robert L. Morland, member of the State Board of Pharmacy, on "State Board Examinations"; D. D. Turner

and Prof. G. Bachman on "Spirit of Nitrous Ether." In a paper on "Physiological Tests of Digitalis Produced in Minnesota," Dr. Newcomb stated that the results indicated a more potent drug than had ever before been produced in Minnesota. Dr. Newcomb also presented a brief paper on the need of the pharmacist exercising care in the selection of his business stationery.

Secretary Newcomb called attention to the action of the National Association of Boards of Pharmacy in adopting the recommendation that a college graduation be required for the registration of applicants by boards after 1920.

V. R. Kokatnur, of India, now a student in the University of Minnesota, addressed the Association and told of his desire of coming to the University for a pharmaceutical education and then to return to India to establish a college of pharmacy there. Following his address, the Executive Committee was directed to investigate the advisability of providing a scholarship for a student from India.

The following officers were elected: President, John F. Danek, Minneapolis; vice-presidents, Charles McGregor, Detroit; Dr. Emmet K. Ogden, Detroit, and H C. Backer, Olivia; secretary, E. L. Newcomb, Minneapolis; treasurer, L. J. Aberwald, St. Paul; Executive Committee, A. J. Kline, Max Menzel, and R. J. Messing. The following were nominated for appointment to the State Board of Pharmacy: W. A. Abbett, Duluth; R. J. Messing, St. Paul; R. Morland, Worthington, and Max Menzel, Pipestone. The next meeting will be held in St. Paul.

ILLINOIS PHARMACEUTICAL ASSOCIATION.

Arrangements for the thirty-seventh annual meeting of the Illinois Pharmaceutical Association, which is to be held at Springfield, June 6 to 8, are well under way. Vice-president J. Robert Phillips reports that the State Armory has been secured for the convention, and that there are excellent prospects for a large attendance. Harry B. Mason has accepted an invitation to address the convention, and Prof. James H. Beal will present a paper dealing with the anti-narcotic laws.

The movement to secure additional members has resulted in the accession of nearly three hundred so far, with prospects of doubling this number before the assembling of the convention.

NATIONAL ASSOCIATION OF DRUG CLERKS WILL MEET IN CHICAGO.

The National Association of Drug Clerks will hold its annual convention at the Hotel Sherman, Chicago, on June 1, 2, and 3. In conjunction with the convention an exhibition, which will be open to the public, is planned. Drug manufacturers and all allied interests, proprietary concerns, etc., are invited to participate. The object of the exhibition, Secretary Mandabach states, is to educate the public to buy their drugs from registered pharmacists.

JERSEY CITY RETAIL DRUGGISTS' ASSOCIATION ELECTS OFFICERS.

The Jersey City Retail Druggists' Association, at its annual meeting on February 15, elected the following officers: President, J. G. Block; vice-president, W. R. Taft; treasurer, E. H. Maier; secretary, L. C. Hines.

A committee was appointed to coöperate with Local Secretary Charles Holzhauer, of the American Pharmaceutical Association, in preparing for the Atlantic City meeting.

FORTIETH ANNIVERSARY OF BOSTON DRUGGISTS' ASSOCIATION.

The fortieth anniversary of the Boston Druggists' Association, observed at Young's Hotel, Boston, with a dinner, was graced by the presence of Lieut.-Gov. Calvin Coolidge and Hon. Channing Cox, speaker of the Massachusetts House of Representatives.

The following officers were elected for the ensuing year: Prof. E. L. Patch, president; George H. Ingraham, treasurer, and Harry C. Wiggin, secretary. Following the custom of the Association, Mr. Briry, as the retiring president, became chairman of the Executive Committee, his associates being Charles F. Ripley, H. E. Bowman, A. H. Bartlett, Charles C. Hearn, F. W. Doliber, and Fred L. Carter. The Membership Committee elected is C. E. M. Harrington, Ralph R. Patch, H. C. Otis, H. W. DeCoster, and R. Albro Newton.

PHILADELPHIA ASSOCIATION OF RETAIL DRUGGISTS ELECTS OFFICERS.

At the annual meeting of the Philadelphia Association of Retail Druggists the following were elected as officers for the year 1916:

President, R. W. White; first vice-president, W. D. Reynolds; second vice-president, A. R. Hesske; third vice-president, W. H. Morris; secretary, J. H. Barlow; treasurer, George W. Fehr; Executive Committee, H. C. Bingham, F. R. Keller, P. S. Rohn, Frank J. Austin, C. A. Wolff, S. C. Henry, and Alex. Young.

PHILADELPHIA BRANCH APPOINTS COMMITTEE FOR ATLANTIC CITY MEETING.

The Philadelphia Branch of the American Pharmaceutical Association has named the following committee to help arrange entertainment for the members of the American Pharmaceutical Association during the Atlantic City convention of that organization next September: William L. Cliffe, E. Fullerton Cook, C. Mahlon Kline, H. K. Mulford, Franklin M. Apple, and Samuel C. Henry, *ex-officio*.

SPECIAL LECTURES AT PHILADELPHIA COLLEGE OF PHARMACY

The Philadelphia College of Pharmacy has extended an invitation to the retail druggists of Philadelphia to attend a series of lectures and exhibitions on "Commercial Pharmacy" at the college building, 145 North Tenth Street, on Fridays at 1 o'clock. This course presents in an interesting and practical way the most important features of successful business practice. It is conducted under the direction of the Department of Commercial Pharmacy, but a number of special speakers have been invited to coöperate. The subjects still remaining follow:

March 17, "Principles of Salesmanship," by Prof. Herbert W. Hess, Wharton School, University of Pennsylvania; March 24, demonstrations of salesmanship by Samuel B. Davis, Clyde R. Hancock, Reese Roberts, Thomas L. Fouke, and E. G. MacCracken; March 31, salesmanship as applied to professional pharmacy: "Prescriptions," by J. C. Peacock; "Clinical and Diagnostical Work," by J. Atlee Dean; "Biologicals," by H. H. Whyte; April 7, demonstration of rubber goods and brushes, with a talk on their manufacture, quality, and values; April 14, demonstration of drug-store side lines: sponges, perfumes, soaps, stationery, candy; April 28, "Principles of Advertising," by M. P. Gould, of the M. P. Gould Company, of New York; May 5, window decorating; May 12, window decorating.

The windows will be decorated by Mr. Harry Harfman with goods supplied by Mr. George B. Evans. There will be other features on both dates, such as lantern illustrations of many drug-store windows, talks on window decorating, etc.

HIGHLAND PARK COLLEGE.

The recent annual exhibition was attended by a large number of visitors. The exhibits were of great variety and included physical and chemical experiments, pharmaceutical manipulations and manufacturing, analysis assaying, electric methods, and many other things.

UNIVERSITY OF ILLINOIS.

The fifty-sixth commencement of the University of Illinois School of Pharmacy will be held at the new Central Music Hall, 64 East Van Buren Street, Chicago, on Wednesday afternoon, April 26. The principal address will be made by Prof. Frederick J. Wulling, Dean of the College of Pharmacy, University of Minnesota, and president-elect of the American Pharmaceutical Association. The class speaker will be Frank Graham. President James will confer the degrees on a large class, which probably will number about fifty.

The arrangements for the Senior class are in charge of the following class officers: President, Dennis H. Real; vice-president, A. H. Bogard; secretary, R. L. Greenwood; treasurer, Thomas B. Copeland.

The Junior class recently elected officers as follows: President, Leroy T. Stark; vice-president, H. Giddings; secretary, F. Smith; treasurer, Corydon A. Babbitt; sergeant-at-arms, Al Ferring.

NEW YORK COLLEGE OF PHARMACY.

Commencement will this year be held on the evening of Thursday, May 11, and, as usual, at Carnegie Hall. It is hoped that President Butler will be able to preside, but, in his inability so to do, the provost of the University, Prof. William H. Carpenter, will assume his duties. The Hon. T. C. T. Crain has consented to address the graduating class. All those interested may obtain tickets by writing to the college office.

The Junior class exercises will take place on Wednesday evening, May 10, in the Col-

lege lecture hall, at which time an interesting program will be presented and the honor students of the Junior class will receive their awards.

The Secretary's office, in conjunction with the Membership Committee, is engaged in the publication of a list of members, which, together with an outline of the objects of the institution, will be sent to all the pharmacists of Greater New York.

The Nominating Committee has drawn up the following ballot for presentation at the annual meeting, on March 21: For president, Nicholas Murray Butler; first vice-president, Charles F. Chandler; second vice-president, William J. Schieffelin; third vice-president, Henry C. Lovis; treasurer, Clarence O. Bigelow; secretary, Thomas F. Main; assistant secretary, Charles W. Holzhauer. For trustees to serve three years: Otto P. Amend, Adolph Henning, Caswell A. Mayo, Reuben R. Smith, J. Leon Lascoff.

At this meeting Prof. Henry P. Hynson will address the members on "Commercial Training for the Pharmacist."

Subject to acceptance by the Board of Regents, the Pharmacy Council of the State of New York has decided to increase the entrance requirements, beginning with the session of 1918–19, to two years' high school or 30 Regents' counts.

The following gentlemen have been recently elected to membership in the college: Louis Berger, H. H. Blomeier, John H. Kimmel, R. M. McCutcheon, Morris Manheimer, Nelson P. Snow.

THE PHARMACIST AND THE LAW

THE STRUGGLE IN OHIO FOR HIGHER PHARMACY EDUCATION, SHOWING THE NEED OF NATIONAL UNIFORM LAWS AND RECIPROCITY BETWEEN THE VARIOUS STATES.

BY FRANK CAIN, M.D., PH.M.*

The writer goes on record here to state that, in his humble opinion, the lack of proper educational requirements in the past has been the chief source of most of the evils existing to-day in pharmacy. The progress other professions have made, by adopting more modern laws that meet the needs of a more complex civilization, should be an object-lesson to pharmacists. The new Ohio pharmacy law will cause students to honor and respect a college of pharmacy and its teachers; it will give the better educated the first chance in honorable and profitable appointments; it will develop a greater love between teachers and students.

Prerequisite education for eligibility to a state board examination and uniform reciprocity laws in every state is the thought uppermost in the mind of the writer. It is unfortunate that the different states do not pass similar pharmacy laws. We shall no doubt obtain greater uniformity in the future through national coöperation of all the states. This coöperative work begins first in the individual state, and is now spreading in the allied profession—the practice of medicine—between the various states. The object in view is to give information which may be helpful in securing uniform legislation in other states where prerequisite laws are contemplated. It will save a great deal of time in harmonizing the statutes of states later if laws that are not adaptable for national reciprocity are avoided.

There were three bills introduced into the last Ohio legislature, all having in view higher pharmacy education. The first bill provided for two years in high school and two years in a college of pharmacy. The second provided for one year in high school and two years in a college of pharmacy. The third provided for two years in high school and two years in a college of pharmacy. This bill differed but slightly from the first bill introduced, known as the Mooney bill. The second bill, introduced as the Clark bill, while requiring only one year in high school, also contained an apprenticeship clause, which the other two bills had omitted. Under the circumstances a joint committee was appointed by the House and Senate and a day set to listen to the arguments of all those interested.

The results of a later conference were satisfactory to all concerned. However, there

* Representative at the Conference of Ohio Colleges.

is one point in the new Ohio pharmacy law that was not agreed upon by the Conference; namely, that college attendance only, for four years, shall qualify for registered pharmacist. They agreed that one year's experience in a retail drug store and three years in a college of pharmacy shall qualify for registered pharmacist examination. This point was taken from us by the legislative committee, claiming it would be too much of a handicap on higher education. The alternative, two years' drug-store experience and two years in a college of pharmacy, was accepted by the legislative committee, which the druggists think the more practical plan. We must have uniformity in state laws, if we are to secure reciprocity between the various states.

Under the old Ohio law colleges were placed under a disadvantage in not being able to compel students to attend their classes, because they did not need the college diploma, as they do in medicine and dentistry, before being eligible to take a state board examination. The necessary attendance at college will produce evenly-balanced knowledge in the different branches, thus obtaining general efficiency. Next year we believe the good work will show in the high class of students who will enter the colleges of Ohio.

The great need of the hour is more ethical pharmacy, less commercialism, more association work among the druggists, and the amalgamation of every state association with the American Pharmaceutical Association. Therein we should include the American Conference of Pharmaceutical Faculties, the National Association of Boards of Pharmacy and in coöperation with the various medical associations. By such coöperation the public will acquire a higher regard for druggists and physicians, who, through their representatives, could secure any kind of necessary legislation.

Ohio is now doing this kind of association work, and good results are reported from different parts of the state by Theodore D. Wetterstroem, secretary and propagandist for the Ohio State Pharmaceutical Association. And now that we have a real pharmacy law, we expect to make some rapid forward strides, but we can only hope for success if aided by association work. Ohio, with her powerful national influence in every activity of life, will do her full share in contributing toward the elevation of American pharmacy.

TRADING-STAMP LAWS VALID.

Florida and Washington statutes which have for their object prevention of the use of trading-stamps and profit-sharing coupons, this result being achieved by prohibitive taxes, were held constitutional by the Supreme Court of the United States, March 6. The Court held that state legislatures might prevent the issuance of profit-sharing coupons of all kinds. The Court did not, however, pass on the question of the validity of the use of cash premiums.

The Supreme Court never has passed on the question before, but some state courts have held coupon regulation laws unconstitutional. Premium advertising has been held legal, however, in Alabama, California, Colorado, Georgia, Maryland, Nebraska, Missouri, Illinois, Rhode Island, and New York.

A FEDERAL HEALTH DEPARTMENT.

Senator Owen has again introduced his bill for the establishment of a Department of Health, under the supervision of a Secretary of Health, appointed by the President and having a seat in the Cabinet. To this department would be transferred all matters pertaining to public health and vital statistics except the Medical Departments of the Army and Navy.

Senator Smoot has introduced a bill for the establishment of a Public Health Service. In addition to the administrative divisions now authorized by law, there is created a Division of Sanitary Engineering and of Child Hygiene, and the Division of Vital Statistics of the Census Bureau is transferred to this service. The office of Assistant Secretary for the Public Health is created, under the supervision of the Treasury Department.

DEFINITION OF "WHOLESALER."—MANUFACTURERS MAY SELL TO WHOLESALERS ONLY.

A "wholesaler" is one who buys in comparatively large quantities and who sells usually in smaller quantities, but never to the ultimate consumer of an individual unit. He sells either to a "jobber," who is a sort of middleman, or to a "retailer," who sells to the actual consumer. The quantities bought by the wholesaler may vary from a fraction of a carload to many carloads. It is the character of the selling, not of the buying, that stamps a man as a "wholesaler." Any

firm or corporation is at liberty to sell to whom it pleases so long as it has not a monopoly of the product; if it decides to sell only to wholesalers, it may do so, and the retailer has no cause for complaint. (Great Atlantic and Pacific Tea Co. vs. Cream of Wheat Co., 227 Fed. 46, U. S. Circuit Court of Appeals.)

NEW YORK LEGISLATION.

The amended Hamilton-Fertig bill has virtually the same formula-disclosure provisions as the New York Health Board's "patent" medicine registration ordinance.

The additions proposed in the Boylan-Bloch bill to amend the New York cocaine law seek (1) to make it a felony for a veterinarian to prescribe or dispense any alkaloid cocaine or beta eucaine or any of their products for the treatment of or consumption by a human being, and for a dentist to do so for any person not under his immediate treatment as a dentist; (2) to make it a misdemeanor for any one falsely to use the title "registered pharmacist," "licensed physician," "licensed dentist" or "licensed veterinary surgeon" or falsely to represent himself to be a dealer in drugs, for the purpose of obtaining any of the above-mentioned articles.

Another bill on the subject of state narcotic legislation, which has just been introduced into the State Legislature by Assemblyman Evans, seeks to make all second violations of the present opium-chloral law a felony, instead of a misdemeanor.

TREASURY DECISION 2292 AMENDS T. D. 2244.

In entering items calling for narcotic preparation or remedies on the order forms issued by the Commissioner of Internal Revenue, in accordance with the provisions of Section 2 of the Act of December 17, 1914, the quantity of narcotic drug to the fluid or avoirdupois ounce should be indicated thereon, or, if ordered in tablet or pill form, the total number of tablets or pills, and the quantity of narcotic drug in grains or fractions thereof contained in a tablet or pill, must be stated. The narcotic content of official liquid or solid preparations or remedies need not be indicated on order forms, provided their official character is designated by "U. S. P." or "N. F." The law does not permit the use of official narcotic order forms for any other purpose than to obtain narcotic drugs coming within its scope, and in ordering physicians' medicines cases, buggy cases, hypodermic cases, and similar articles, the official order form should be used only for the narcotic drugs, or preparations and remedies containing such drugs, which, however, may be attached to and forwarded with the order for the desired article. The ordering of a narcotic preparation or remedy in a manner which does not clearly indicate the kind and quantity of narcotic drug contained therein, or that it is a "U. S. P." or "N. F." preparation or remedy, cannot be permitted.

The enforcement of this ruling will become effective May 1, 1916, in order to enable manufacturers and other dealers to acquaint their customers with its provisions. Until that date narcotic orders received by manufacturers and dealers, which call for complex preparations or remedies the formulæ of which are not well known to the purchaser, should have the quantity of narcotic drug to the fluid or avoirdupois ounce, or in an ounce of tablets or pills, added in red ink to the order form to distinguish it from the original order, the manufacturer or dealer immediately notifying the purchaser to make a corresponding addition on the duplicate order retained by him.

PROCEDURE IN CASE OF ATTACHMENT PROCEEDINGS UNDER LAW.

In making sales of narcotics under attachment proceedings, the court officer should prepare a complete inventory of all narcotic drugs coming into his possession through court proceedings, and require the purchaser to make out a government order form to the insolvent concern in order that the records of both parties will be kept straight.

Such officers should also be advised that to dispose of any narcotic drugs at a public sale to a person not registered under the Harrison law is illegal, as aiding such purchaser to violate section 8 of the law.

Unused order forms belonging to an insolvent concern should be turned over to the collector of internal revenue who issued them for cancellation and necessary correction on his record.

PUBLICATIONS RECEIVED

M. I. Wilbert speaks for uniformity in federal and state legislation in a paper prepared for the United States Public Health Service. We quote several passages from this interesting report:

"Laws designed to restrict the occurrence of poisons, or of other possibly harmful contaminations in food products, are recognized as being of importance, not alone from the standpoint of their intrinsic merit, but also from the point of view of the present temper of popular sentiment.

"The general uniformity in the phraseology and context of the several state food and drug laws would suggest the possibility of a strict compliance with the recommendations of the commissioners on uniform laws, to the effect that uniformity in food and drug laws can best be secured by amendments to the state laws with a view of bringing them in complete harmony with the requirements of the federal law."

This paper also present a *résumé* of laws relating to sale of poisons in state and interstate commerce, from which we abstract the following paragraphs:

"The diversity at present existing between the laws of the various states regulating the manufacture and sale of poisonous drugs is causing a great deal of embarrassment and in some instances complication and delay in the shipping of articles containing poisons from one state to another. The person or firm desirous of developing an interstate business in poisonous drugs is confronted by forty or more independent state laws, the requirements of which are so diverse that it is practically impossible to comply with them by adopting any one form of label for use in all parts of the country. It has been pointed out very properly that if a manufacturer must prepare and label his products in a specific way to meet the requirements in each state, and if the labels required in one state differ from those required in an adjoining state, the process of complying with existing laws becomes cumbersome and the cost prohibitive.

Some years ago an attempt was made in connection with state poison laws to define in a general way the nature of the products to be classed as poisons. These general definitions varied very widely in comprehensiveness, and even the less inclusive would to-day be construed to embrace many articles not recognized as generally harmful poisons because of the limited distribution given them at the present time.

"During the year 1915 persons interested in the enactment of laws to restrict the sale and use of poisons reverted to the earlier proposition of particularizing rather than generalizing the definition of a poison, and practically all of the recently-enacted laws are evidently based on the supposition that for all practical purposes it is best to enumerate specifically the articles that are to be included in the schedule of poisons."

STATE PURE DRUG LAWS.

"State Pure Drug Laws Enacted Since the Passage of the National Food and Drugs Act, June 30, 1906, with a Reprint of Said Act as Amended," is the title of a compilation recently published by the Proprietary Association and the National Wholesale Druggists' Association.

The book includes the Harrison Narcotic Act and regulations for its enforcement, and the narcotic laws of the various states; Cuban decrees and Philippine law; Section 117 of the New York City sanitary code; the Canadian proprietary medicine law; the national and state insecticide laws; extract from pharmacy laws of the several states; net weight laws; advertising laws; sample distribution laws; stock medicine laws, and other laws relating to the drug trade, including acts of all legislatures to December 31, 1915.

WAR DEPARTMENT

List of changes of stations covering period ending February 29, 1916, in the cases of Sergeants First Class and Sergeants Hospital Corps.

SERGEANTS FIRST CLASS

Andrew S. Donnan, from Ft. Douglas, to the Hawaiian Department, on the May transport.

George W. McKenzie, from the Army and Navy General Hospital, to Ft. Sam Houston.

George E. Daily, from Ft. Leavenworth, to the Philippines Department, on the April transport.

George A. Roberts, from Ft. Ethan Allen, to the Southern Department, for assignment to station.

Charles S. Elliot, from the 23d Infantry Hospital, Ft. Crockett, to Ft. DuPont.

Clifford H. Perry, from Ft. Banks, to the 23d Infantry Hospital, Ft. Crockett.

Oscar Kaufer, from the Hawaiian Department, to the U. S., on furlough.

Ralph W. French, from Ft. Logan, to the Hawaiian Department, on May transport.

SERGEANTS

James H. McDermott, from Ft. DuPont, to the U. S. Mine Planter *General John M. Schofield.*

Ignatius B. Thomas, from the U. S. Mine Planter *General John M. Schofield,* to Ft. Monroe.

John A. Brush, from the Hawaiian Department, to the U. S., on furlough.

Leo E. Bishop, from West Point, to the Hawaiian Department, on the March transport.

Brent A. Lemert, from Ft. Wadsworth, to Ft. Ethan Allen.

Fritz J. Sheffler, from Ft. McDowell, to the Army Medical School, Washington, D. C.

Tiffin Annesser, from Ambulance Company No. 5, to duty with the Wisconsin Militia.

John H. Strauch, Jr., from Vancouver Barracks, to the Hawaiian Department, on the March transport.

Claud J. Wilson, from the Letterman General Hospital, to the Hawaiian Department, on the April transport.

Paul T. Hogge, from the Letterman General Hospital, to the Hawaiian Department, on the March transport.

Alexander H. Weir, from the Army Medical School, Washington, D. C., to West Point.

George Gagan, from the Letterman General Hospital, to Vancouver Barracks.

Harvey I. Rice, from Ft. Leavenworth, to the Southern Department, for assignment.

John C. Schweiger, from Ft. Thomas, to Ft. Oglethorpe.

Lemuel R. Williams, from the Southern Department, to the Canal Zone, for assignment to station.

Willard C. Watson, from the Southern Department, to the Canal Zone, for assignment to station.

Jesse E. Massey, from Ft. Sam Houston, to the Philippines Department, on the March transport.

CHANGES OF ADDRESS

All changes of address of members should be sent to the General Secretary promptly. The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the Journal unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.

TAKAMINE, J.
From 550 W. 175th St., New York, N. Y.
To 120 Broadway, New York, N. Y.

ROSENTHAL, D. A.
From Cor. Gay and Clinch Sts., Knoxville, Tenn.
To 521 Gay St., Knoxville, Tenn.

RICHTMANN, WM. O.
From Satsuma Heights, Fla.
To 1721 Van Hise Ave., Madison, Wis.

GRABER, HOWARD T.
From 639 Trumbull Ave., Detroit, Mich.
To 697 Trumbull Ave., Detroit, Mich.

BANKOFF, JACOB
From 345 Hopkinson Ave., Brooklyn, N. Y.
To 191 Brown Place, Bronx, N. Y.

BERNHARD, M.
From Syracuse, N. Y.
To Residence unknown.

CAREY, H. B.
From San Francisco, Cal.
To Residence unknown.

MANKIN, (MRS.) VIRGINIA
From Thurmond, W. Va.
To 3311, 13th St., N. W. Washington, D. C.

KNOX, J. R.
From Center Point, Ark.
To 508 Central Ave., Hot Springs, Ark.

SENECAL, H. C.
From Manila, P. I.
To Vancouver Barracks, Wash.

WORTHINGTON, J. W. W.
From Norristown, Pa.
To Pen Argyl, Pa.

BOMBA, O. J.
From Westhoff, Texas.
To Poth, Texas.

EISELE, GEO.
From Winchester, Ky.
To 1458 E. 86th St., Cleveland, Ohio.

MILLER, F. W.
From Homestead, Iowa.
To Amana, Iowa.

SEELEY, M. J.
From Manton, Mich.
To Room 217, Science Hall, Corvallis, Ore.

GOODWIN, HOWARD
From 291 Atlantic Ave., Boston, Mass.
To 261 Franklin St., Boston Mass.

RUBENSTEIN, LOUIS
From 218 Cherry St., Seattle, Wash.
To Joshua Green Bldg., 4th and Pike, Seattle, Wash.

REMUS, WM. J.
From Residence unknown.
To 845 Division Ave., S., Grand Rapids, Mich.

BOOKER, ROBT. L.
From 619 W. Main St., Richmond, Va.
To 2001 W. Main St., Richmond, Va.

JOURNAL ANNOUNCEMENTS

Subscriptions: Annual subscriptions in advance, including postage: United States and Mexico, $4.00; Canada, $4.35; foreign countries, $4.50. Single copies, 35 cents. Remittances should be made payable to Treasurer H. M. Whelpley, but mailed to Journal of the American Pharmaceutical Association, 253 Bourse Building, Philadelphia, Pa. Under the rules of the Post Office the Journal can be regularly mailed only to bona-fide paid subscribers.

Requests for Back and Missing Numbers: Requests for back and missing numbers should be sent to the Editor. Claims will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from date of issue. Notice of change of address should give old and new address.

Contributions: The Journal accepts no responsibility for the opinion of its contributors. Contributions should be sent to the Editor; use only one side of the sheet for writing, and double-space the lines. Articles are accepted for publication on condition that they are contributed solely to this Journal; and "all papers presented to the Association and its Branches shall become the property of the Association, with the understanding that they are not to be published in any other publications than those of the Association, except by consent of the Committee on Publication." (By-Laws, Chapter X, Article 11.)

Reprints: Authors may obtain reprints of the J. B. Lippincott Company, Philadelphia, Pa., at the prices attached to the proof sent them, provided the order is received before the type has been distributed. The prices are also given on this page.

Advertisements: Communications relating to advertising should be sent to the Editor. Forms close on the first of each month, and copy should be in by the fifteenth of the month preceding date of issue, to receive proof. Date of issue—the fifteenth of the month. Advertising rates sent on request.

Membership: Applications for membership in the American Pharmaceutical Association may be made of any of the officials. The annual payment of five dollars covers the annual dues and subscription to the Journal. Members receive, also, the publications of the Association that are distributed free of charge.

Further information will gladly be furnished by any of the officers of the Association and members.

An Application Blank will be found on page xix of this issue.

Cost of Reprints: Reprints will be furnished at the following prices:

	No cover	With cover
100 copies, 4 pages ..	$2.50	$4.50
200 copies, 4 pages ..	3.00	5.50
50 copies, 8 pages ..	2.75	4.50
100 copies, 8 pages ..	3.50	5.00
200 copies, 8 pages ..	4.50	6.50
50 copies, 12 pages ..	3.75	4.75
100 copies, 12 pages ..	4.75	5.75
200 copies, 12 pages ..	5.75	6.75
100 copies, 16 pages ..	6.75	7.75
200 copies, 16 pages ..	7.50	8.50

Orders may be sent to J. B. Lippincott Company or Journal of the American Pharmaceutical Association, 253 Bourse Building, Philadelphia, Pa.